VOLUME XLI NUMBER ONE

THE NATIONAL GEOGRAPHIC MAGAZINE

JANUARY, 1922

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PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
HUBBARD MEMORIAL HALL
WASHINGTON, D.C.

$3.50 A YEAR 50c. THE COPY

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TO carry out the purposes for which it was founded thirty-four years ago, the National Geographic Society publishes this Magazine. All receipts are invested in the Magazine itself or expended directly to promote geographic knowledge.

ARTICLES and photographs are desired. For material which the Magazine can use, generous remuneration is made. Contributions should be accompanied by an addressed return envelope and postage.

IMMEDIATELY after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. Four expeditions have followed and the extraordinary scientific data resultant given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures. As a result of The Society's discoveries this area has been created a National Monument by proclamation of the President of the United States.

AT an expense of over $50,000 The Society sent a notable series of expeditions into Peru to investigate the traces of the Inca race. Their discoveries form a large share of our knowledge of a civilization which was waning when Pizarro first set foot in Peru.

THE Society also had the honor of subscribing a substantial sum to the historic expedition of Admiral Peary, who discovered the North Pole.

NOT long ago The Society granted $25,000, and in addition $75,000 was given by individual members through The Society to the Federal Government when the congressional appropriation for the purchase was insufficient, and the finest of the giant sequoia trees of California were thereby saved for the American people and incorporated into a National Park.

THE Society is conducting extensive explorations and excavations in northwestern New Mexico, which was one of the most densely-populated areas in North America before Columbus came, a region where prehistoric peoples lived in vast communal dwellings whose ruins are ranked second to none of ancient times in point of architecture, and whose customs, ceremonies and name have been engulfed in an oblivion more complete than any other people who left traces comparable to theirs.

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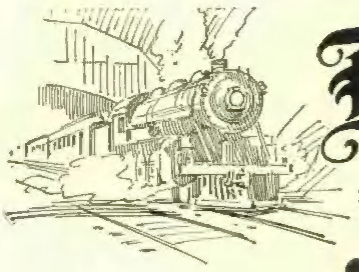

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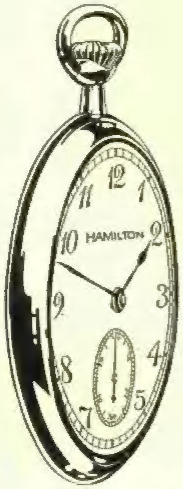

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You know him. You have suffered from his ways.

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Let us get together. Let us mould the steel-jacketed bullets of public opinion that will pierce his thick skin; make him realize that he must consider the rights of motorists and pedestrians.

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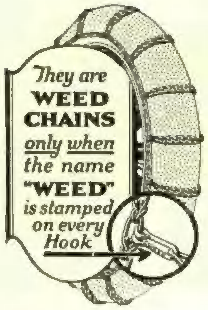
Show this to the thick-skinned driver. Let him choose his own class. And keep on the firing line till every human hippo who is muscle-bound above the ears, is driven from the road.



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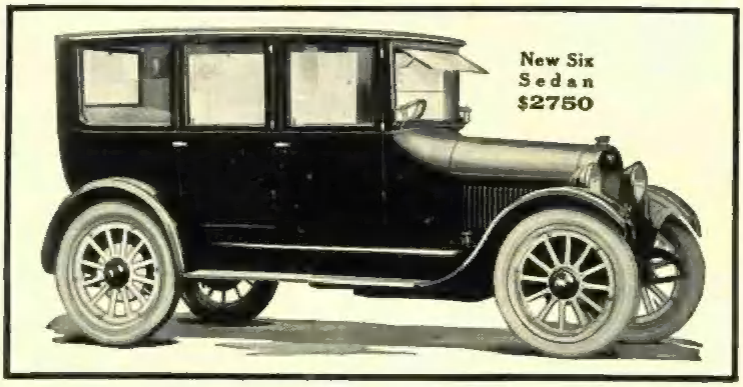

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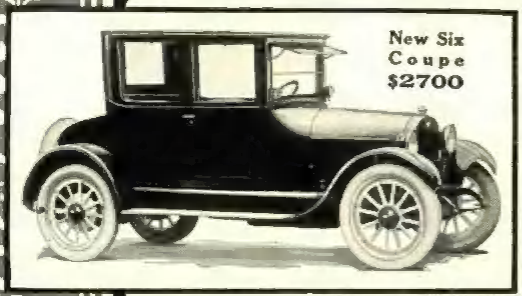

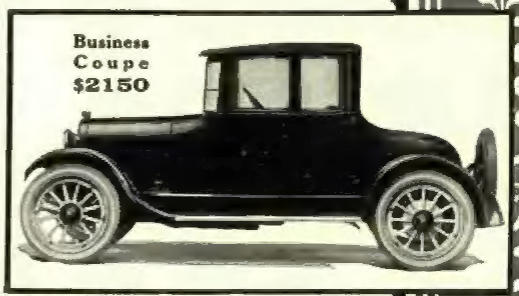

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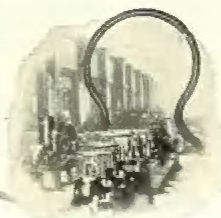

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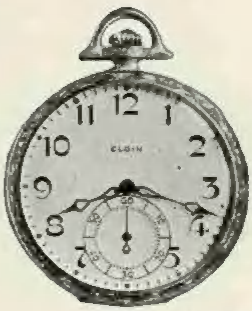

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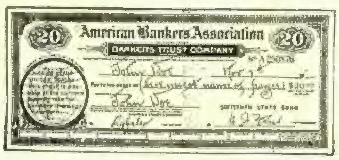

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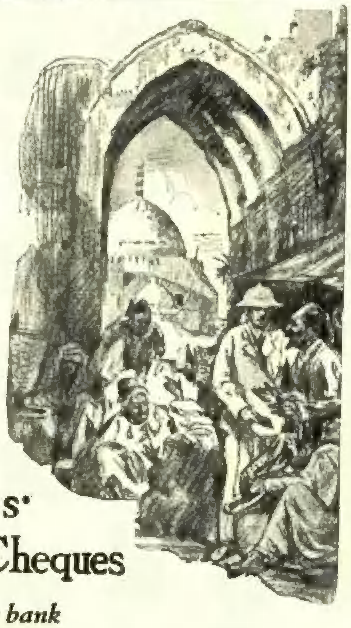

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VOL. XLI, NO. 1 WASHINGTON JANUARY, 1922

THE NATIONAL GEOGRAPHIC MAGAZINE

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THE ISLANDS OF BERMUDA

A British Colony with a Unique Record in Popular Government

By WILLIAM HOWARD TAFT

AUTHOR OF "GREAT BRITAIN'S BREAD UPON THE WATERS: CANADA AND HER OTHER DAUGHTERS," "THE HEALTH AND MORALE OF AMERICA'S CITIZEN ARMY," "THE PROGRESSIVE WORLD STRUGGLE OF THE JEWS FOR CIVIL EQUALITY," "WASHINGTON: ITS BEGINNING, ITS GROWTH, AND ITS FUTURE," ETC., IN THE NATIONAL GEOGRAPHIC MAGAZINE

I AM HERE for my annual visit to this Society.* In previous years, which began the year after I left office, I have taken subjects the geographical character of which it was difficult clearly to establish, but this year I shall conform to the proprieties of the occasion. By good luck, Mrs. Taft and I were able to spend four weeks of January last in the Islands of Bermuda, and so delightful was our visit and so interesting was the local suggestion, that I concluded to make the Islands the theme of this year's talk.

The Bermuda Islands are only twenty square miles, about one-fourth the size of Staten Island, but I venture to think that there is no group in any ocean so small which has played so conspicuous a part on the world's stage as the Bermudas. They form a microcosm, the catastrophes, the vicissitudes, the political, economic, and religious controversies, and the development of whose people, as a solitary unit, far out to sea, reflect much of the world history of the English-speaking peoples.

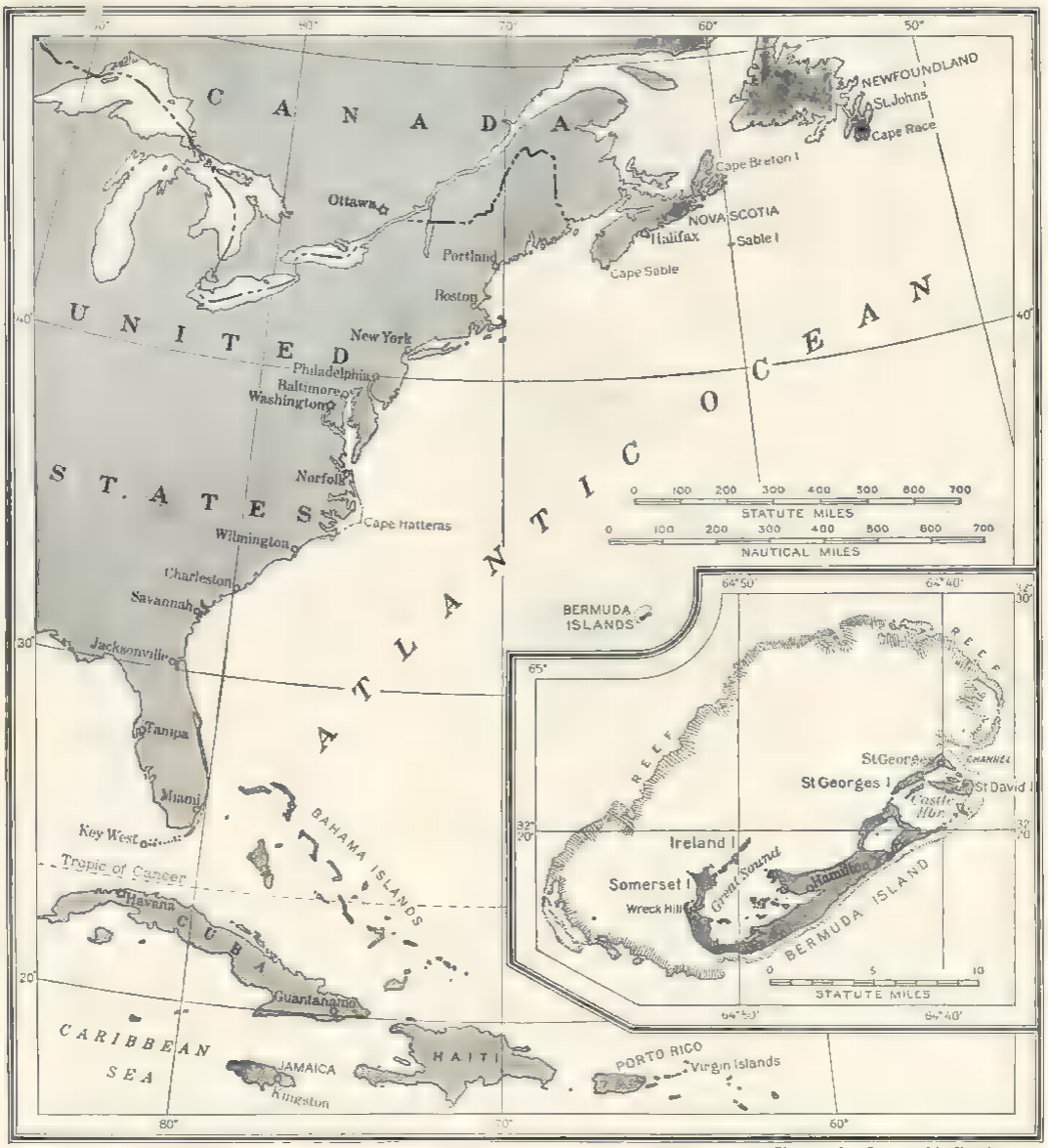
And, first, what are they? and where are they? The answers to these geographical questions will explain much of their history and present condition.

The Bermudas are a group of what are said to be 365 islands (one for every day in the year) in north latitude 32 degrees and west longitude 64 degrees. There are only five important islands, and the whole group are so close together that those capable of use are united by bridges and causeways, so as to give to the sojourner in his drives the impression that they are but one island, with large indenting bays and inlets.

Strung together, they have the form of a fishhook with the stem pointed to the northeast and the curve of the hook to the southwest. From the northeast end to the point of the hook, you can piece out a curving drive 22 or 23 miles long, and the width of land from sea to sea through which you drive will hardly average a mile. The superficial area of the whole group is 19½ miles.

The islands are nearly 600 miles from Cape Hatteras, the nearest mainland; they are 700 miles from Charleston, South Carolina, opposite which they lie in the Atlantic; they are nearly 700 miles from New York and about 50 miles farther from Halifax (see map, page 2).

*An address delivered before the National Geographic Society in Washington in February, 1921.



Drawn by James M. Darley

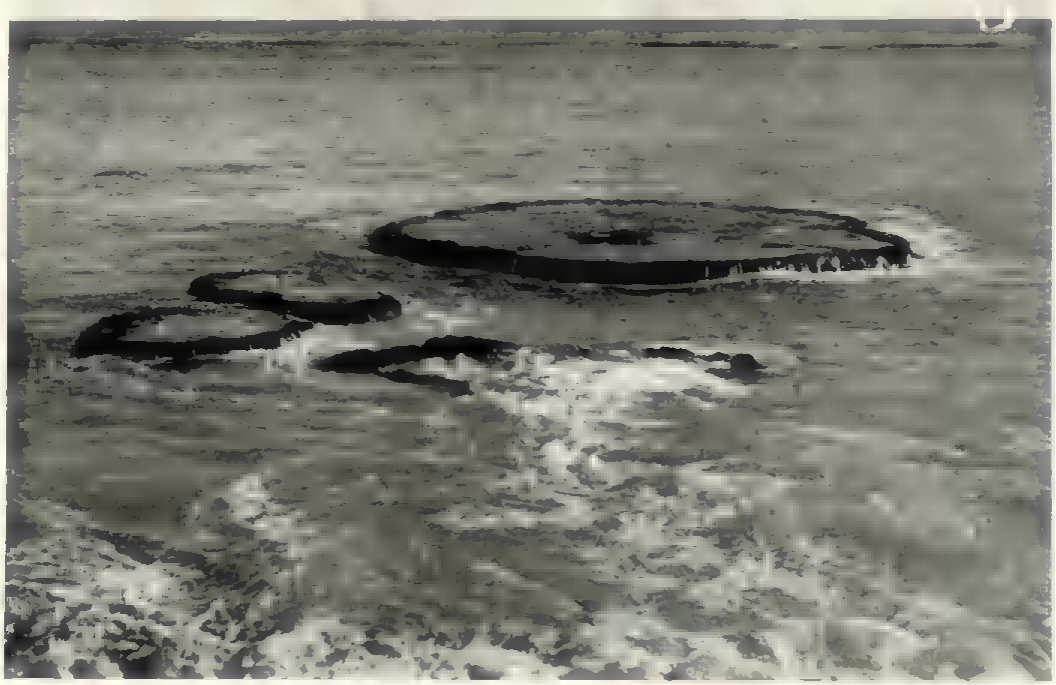
A MAP OF THE BERMUDA ISLANDS

The outline sketch shows the relation of the archipelago to the Atlantic seaboard of the United States—600 miles from Cape Hatteras and 700 miles from Charleston and New York. The insert map shows the coral reefs which border the fishhook-shaped group of islands on the north, west, and south (see text, pages 1, 2, and 3).

They are about 800 miles from the nearest of the West Indies; they are nearly 300 miles from the southern or southeastern edge of that river of warm water, 100 fathoms deep, flowing over an ocean depth of 2,500 fathoms, from the Gulf of Mexico to New Brunswick, Nova Scotia, and beyond to European shores, which we call the Gulf Stream.

They are irregular hills and ridges of comminuted shells, reaching in some places to a height of 250 feet, drifted and deposited by the wind on the top of a mountainous column of volcanic rock rising from the floor of the sea three miles below. This peak is a solitary one in all that part of the Atlantic Ocean. It has been covered by this æolian limestone and a thinner plaster of coral rock.

After the expedition of H. M. S.



Photograph from S. S. Spurling

A GROUP OF "BOILERS" OFF THE SOUTHERN COAST OF THE BERMUDAS

Reefs of this peculiarly symmetrical form have not been found in any other part of the world. The rims are made up of living crusts of barnacles, mussels, and serpulae which usually rise from one to two feet above low-tide level. They get their name "boiler" from the fact that heavy seas dash against the hard outer rim and fall over into the central area like a cataract.

Challenger on her scientific exploration of the Atlantic Ocean bottom and islands in 1873 had disclosed the lonely column upon which the Bermudas rested, there was an effort to reconcile what seemed a pile of coral rock three miles high in the sea with Darwin's conclusion that the coral animal would not work more than 100 fathoms below the surface.

A desire to find fresh water on the islands led to the sinking of a well 1,200 feet deep, and while it did not bring what was sought, it greatly gratified a lot of puzzled scientific men in disclosing that the coral rock and æolian limestone were a mere cap to what was an old volcano sticking its cratered top up to within less than one thousand feet of the shining surface of the translucent sea.

The top of this subaqueous mountain is much greater in superficial area than that of the visible islands, but it is everywhere crowned with coral and limestone, which protrude in dangerous reefs on the north, west, and south sides of the islands, as far as eight and ten miles from their shores, sometimes peeping above the surface and at others lurking just beneath.

One need not say that such a situation makes Bermuda an awkward place for ships to reach and safely land upon, and this circumstance is an important factor in her history.

Indeed, it makes a danger point in the course of ships coming out of the Gulf, taking advantage of the Gulf Stream, and when opposite to Bermuda changing their course and directing it toward the Canary Islands and the Mediterranean and Europe generally.

IN A SCIENTIFIC WORLD OF ITS OWN

Let me note another characteristic of Bermuda due to her geographical and geological features. Bermuda is all by herself in the scientific and naturalist world. Her soil, which is red, is nothing but the result of the working of the weather on the æolian limestone and coral rock. These islands came from the wind

Photograph by Emil P. Albrecht

ALONG THE SOUTH SHORE OF THE BERMUDAS

The soil of Bermuda is the result of the action of the elements on the æolian limestone and coral rocks.

and drift and currents of the seas. As one writer says: "Probably we could not select a more perfect example of current-formed islands than the Bermudas."

This origin has turned the closest attention of natural scientists to these islands and brought out from them many articles and volumes on the geology, conchology, zoölogy, actinology, arachnology, ichthyology, meteorology, and the flora and fauna of this little punctuation point on the surface of the Atlantic.

While we cannot entirely exclude from the enthusiasm and prolific activity of our scientific men the motive which the charm and bodily comfort of the islands furnished for these expeditions thither, the publications manifest an exceptional interest on their part in this tiny spot on the world's and ocean's surface which the peculiar history of its creation has justified.

Some of the most fruitful sources of the spread of life, animal and vegetable, are wind, current, and birds; and here we have the result of them all in an isolated form, so set apart as to permit the most satisfactory study of their results.

Fish were naturally attracted to such a honeycombed front to the sea as these coral banks make, and their variety, beauty, and flavor are such that the taking of them ought to be a great industry.

Indeed, even the deep-sea monsters gather here apparently to note this obstruction in the wide depths of their domain, and the islands were for a time the center of a whale industry; but the fisheries as a whole have not been developed, though the ichthyology of the group, both in respect of those denizens who inhabit the shallower waters and also the deep sea, has been the subject of many scientific treatises.

The transparent waters, the beauty of the shallow sea bottom near the shore, and the brilliant coloring of many of the fishes make a picture in the mind of even the casual observer not soon forgotten (see Color Plates I to XVI in this number of THE GEOGRAPHIC).

By one of the freaks of the coral shores so frequent here, a small pool has been formed in an island grotto in which several varieties of fish were, perhaps, first imprisoned and others have been added. They have grown in size and

Photograph by Emil P. Albrecht

THE CATHEDRAL ROCKS OF SOMERSET ISLAND, BERMUDA

The sea has washed out quantities of soft rock, leaving these fluted and fretted columns, which support a roof of hard limestone.

number and there they can be seen near at hand and their beauty of color brought out. Their voracity is their most impressive characteristic, and the place is significantly called the "Devil's Hole."

BERMUDA IS AS FREE OF SNAKES AS IS IRELAND

The birds, especially the aquatic species, are numerous, 283 species visiting the islands yearly. Many varieties were much more in evidence when the islands were discovered than now. Their number, their tameness, the great supply of good meat and eggs they furnished, as a source of food, formed one theme of the rosy accounts which were circulated about the islands in the early years of their history. Efforts were made to preserve the most useful, but failed.

There are no more snakes in Bermuda than there are in Ireland. They have a lizard and some varieties of turtle, but that is all of the reptile life.

The turtles must in old times have been of huge size; one, it was said, was large enough to give a good meal from its meat to fifty men, and the eggs and the oil of such monsters were equally useful. There are turtles there still, but they have been discouraged in their expansive ambitions and do not furnish forth a marriage feast as generously as in the dawn of civilization in that little community.

The Bermudas are the land of adopted nativity. They are most hospitable to new varieties of life. Some enterprising grower of plants introduced a toad to take care of the insects which were troubling him in his garden and though this was only in the latter part of the last century, one runs across everywhere frequent evidence of these immigrants of a size startling to one used to a more modest variety at home.

A PLAGUE OF RATS LEAVES A PLAGUE OF CATS

Very early in the settlement, and before 1620, a vessel brought some enterprising rats, which, with enthusiasm worthy of a better cause, multiplied until they ravaged the islands, ate everything

Photograph by Emil P. Albrecht

LOOKING SEAWARD FROM BEHIND THE CATHEDRAL ROCKS
(SEE ALSO ILLUSTRATION ON PAGE 5).

in sight, swam in great multitudes from one island to another, leaving havoc in their train.

Cats were introduced, but to no immediate purpose. Even the fish took part in resisting the rats, and many of the finny tribe were caught with rats in their stomachs. Suddenly they disappeared as they had come and left nothing but a plague of cats, with their night-blooming characteristics, as a reminder of this rodent visitation.

Mark Twain, speaking of this feature of Bermuda, says:

"You may march the country roads in maiden meditation, fancy free, by field or farm, but no dog will plunge out at you from unsuspected gate, with breath-taking surprise, of ferocious bark, notwithstanding it is a Christian land and civilized.

"We saw upwards of a million cats in Bermuda, but the people are very abstemious in the matter of dogs. Two or three nights we prowled the country far and wide, and never once were accosted by a dog. It was a great privilege to visit such a land. The cats were no offense when properly distributed, but when piled they obstructed travel."

The insects are not nearly so numerous or troublesome as in the tropics, but in the summer time the ants and mosquitoes do swarm and are aggressive. Some Bermudians cherish the idea that they have no troubles of this kind.

Mark Twain said: "We had mosquito nets and the Reverend (*i. e.*, his companion) said the mosquitoes persecuted him a good deal. I often heard him slapping and banging at these imaginary creatures with as much zeal as if they had been real. There are no mosquitoes in the Bermudas in May."

BERMUDA SPIDERS ARE TERRIBLE IN SIZE ONLY

The spiders are terrible in size, but beautiful in appearance and innocuous in fact. A fervent scientist writes: "The spiders would give entertainment to any enthusiast for months, for their name is legion." As Mark Twain says of them:

"We saw no bugs or reptiles, and so I was thinking of saying in print, in a general way, that there was none at all; but one night, after I had gone to bed, the

Reverend came into my room carrying something and asked, 'Is this your boot?'

"I said it was, and he said he had just met a spider going off with it. Next morning he stated that just at dawn the same spider raised his window and was coming in to get a shirt, but saw him and fled.

"I inquired, 'Did he get the shirt?' 'No.' 'How did you know it was a shirt he was after?' 'I could see it in his eye.'

"We inquired around, but could hear of no Bermudian spider capable of doing these things. Citizens said their largest spiders could not more than spread their legs over an ordinary saucer, and that they had always been considered honest.

"Here was testimony of a clergyman against the testimony of mere worldlings—interested ones, too. On the whole, I judge it best to lock up my things."

Photograph by Emil P. Albrecht

"KHYBER PASS," A PICTURESQUE ROADWAY CUT THROUGH ONE OF BERMUDA'S LIMESTONE HILLS

Bermuda has some of the world's finest highways, for they are hewn out of solid limestone. The only unfortunate feature is that they are extremely slippery in wet weather.

The flora of the Bermudas is full of beauty for the observer and full of interest for the man of science. Of the trees and plants and shrubs in the islands, 80 per cent inhabit also the West Indies and southern Florida.

SIXTY-ONE SPECIES OF PLANTS PECULIAR TO BERMUDA

Nearly 9 per cent, or 61 species growing in Bermuda or its waters, are endemic and are not known to grow anywhere else in the world. These latter are of great interest to naturalists, as they were presumably developed in Bermuda from related plants formerly existing elsewhere, but now mostly extinct, though some may be found elsewhere later.

As Bermuda is of a late geologic formation, and it had to grow all by itself 600 miles or more from any other place (for there is no evidence at all that it was ever attached to other land), scientists have to explain—indeed, they are keen and delighted to explain—how things did get there to grow. As I have said, they find the explanation in the wind, the currents of the ocean, and the birds.

When scientists find sixty or more species of plants that are not found elsewhere, their appetite for further knowl-

Photograph by Emil P. Albrecht

SAWING STONE FOR HOUSES IN BERMUDA

"One has but to saw a hole in his back yard and take out a house of creamy sandstone and set it up and go to living in it" (see page 26).

edge and their ingenuity and imagination are stimulated to explain how these new plants got there. Their enthusiasm in finding and formulating the problem and their ardor in propounding explanatory theories are only exceeded by their joy over some new discovery which solves the problem and sustains, it may be, some of their theories.

BERMUDA, THE OLEANDER ISLANDS

The glory of the trees, shrubs, and flowers of the Bermudas I need not dwell on. In the landscape, the Bermuda cedar furnishes the prevailing green. It is the most abundant and characteristic tree of Bermuda. It is the Bermudian juniper, with berries which are edible but not nourishing.

There is no good evidence that this tree has grown elsewhere. The wood is soft and easily worked, but fades on exposure. It was used for houses in early days, and then, in the maritime glory of Bermuda, when the laws permitted, it was used to build ships. It is not good for ships of war, as the Bermudians found to their cost, because it splinters too much. It is planted along streets and approaches and can be clipped into arbor arches and hedges. It covers all the hills.

The luxuriance and wealth of color of the flora of the Bermudas have attracted the poets, who have sung their beauties.

The purple Bougainvillea, with its varying shades in and out of the sunlight, is entrancing in its beauty and welcomes one into the grounds of the Government House, climbing over the smoothly cut walls of coral through which the white road makes its way to the home of the Governor.

The oleanders are so fine and so gorgeous in their hues that it has been suggested that these be called the Oleander Islands. Coffee, indigo, cotton, and tobacco are of spontaneous growth.

It may not recall pleasant associations in the minds of the youthful to say that in no place in the world does the castor-oil plant grow more perfectly than here.

The climate of Bermuda has a maximum temperature of about 88°, a minimum of about 48°, and a mean of about

70°. This mild climate assists the growth of esculent plants and roots and promotes early growth of onions, potatoes, carrots, tomatoes, and beetroots, as well as lily bulbs and arrowroot, though the last two have not been successful of late.

As Mark Twain says, "The onion is the pride and joy of Bermuda. . . . In Bermudian metaphor, it stands for perfection — perfection absolute. The Bermudian, weeping over the departed, exhausts praise when he says, 'He was an onion.' The Bermudian, extolling the living hero, bankrupts applause when he says, 'He is an onion.' The Bermudian, setting his son upon the stage of life to do for himself, climaxes all counsel, supplication, admonition, comprehends all ambition, when he says, 'Be an onion.'"

AN UNENVIABLE REPUTATION AS A HURRICANE CENTER

In the three centuries of the history of Bermuda, there are many references to hurricanes and tornadoes; and while, if the record of that long period is analyzed, it may not develop a really frequent recurrence of these ebullitions of nature, Bermuda in her early history secured in the estimate of the world rather an unenviable reputation for being the center of powerful hurricanes.

Sir Walter Raleigh, writing in 1587, speaks of the Bermudas as "a hellish sea for thunder, lightning, and storm." The truth is, Bermuda was born into the history of the world because of the wrecks which were strewn on her dangerous reefs in storms, which blinded the mariners or took them out of their course.

There is something in the discomfort of passengers from New York to Bermuda and return which makes them think that times have not changed since the days of Sir Walter Raleigh.

The islands were discovered by Juan Bermudez, a Spaniard, within less than a quarter of a century after Columbus discovered America. Bermudez could not help discovering them, because he was wrecked on them. A number of hogs he had on board escaped, settled in the islands, and multiplied.

Herrera, a Spaniard, is authority for the visit of Bermudez before 1515 and he it is who gave the islands the name.

Oviedo, a Spanish writer, was with Camelo, who tried to land on the islands in the middle of the sixteenth century, but failed and sailed away.

In 1594 an Englishman named May was on a French ship, the crew of which, after having escaped the Bermudas, as they thought, insisted on getting drunk to celebrate and landed on top of the reefs.

May gives an account of the difficulties they met. He says that the Spanish hogs were there, but they were evidently thinner than the traditional razor-back, for he complains that they had no meat on them. A diet of juniper berries would not seem to make for tenderloin, sides, or bacon.

After five months' stay, May and his companions, who had escaped from the wreck, ultimately made their way in a small boat from the islands to Cape Breton in ten days.

Captain John Smith mentions other wrecks, but these are enough to explain why the Bermudas were called the Isles of Devils.

SIR GEORGE SOMERS WRECKED ON THE ISLANDS

In 1609 came the wreck which really began Bermudian history. Sir George Somers was an admiral and a brave old salt. Sir Thomas Gates was a soldier. They were among the grantees of the charter for Virginia. They embarked in a fleet of seven vessels and two pinnaces, which in this fateful year set sail from England for Jamestown, Virginia, there to feed and reinforce the weak and famishing colony that had established itself two years before.

After sailing in company for a considerable period, they met a furious storm and were separated. The *Sea Venture*, upon which were Somers and Gates, sprung a leak, which constant pumping could not stop.

The Admiral did all that man could do at the helm and in command, but the sea was too much for the vessel. While she was *in extremis*, Somers sighted land and directed the slowly sinking hulk into the rocky banks of Bermuda. She did not sink or break up, because the wind drove her between two rocks, where she stuck

Photograph from S. S. Spurling

PLANTING LILY BULBS IN BERMUDA

The Easter lily industry of the islands was started by the late General Russell Hastings, an American soldier, in the eighties (see also illustration on page 12). For many years the Bermuda growers had a practical monopoly of the onion market also, but recently Texas has proved a most formidable competitor.

fast and from her deck were then safely landed the whole ship's company of 150.

Somers was a man of heroic type. Fuller said of him: "This George Somers was a lamb on the land, so patient that few could anger him, and (as if on entering a ship he had assumed a new nature) a lion at sea, so passionate that few could please him."

They remained in the islands nine months.

Somers and Gates divided the company into two parties, who lived apart, and there was some friction as to authority. Among Somers' men were lazy recalcitrants, who did not wish to do the work and run the risk involved in going on to Virginia. Bermuda was good enough for them, and two of them did hide and remain in the islands.

Each party built a pinnace, and finally, under Somers' leadership, they sailed together, all but the two already mentioned, for Virginia. The pinnaces were 40 feet and 29 feet long, respectively, and in these they set out and reached Jamestown, where they found a famine. Fortunately, a day or two after their arrival, Lord Dela Warre, as Governor, arrived with a cargo of provisions and the colony was saved.

SOMERS DIES ON THE ISLANDS

Somers reported that "the Bermooda is the most plentiful place that I ever came to for ffishe, hogge and fowle." He said further: "These islands have ever been accounted as an enchanted pile of rocks and a desert habitation for devils; but all the fairies of the rocks were but flocks of birds, and all the devils that haunted the woods but heards of swine."

His report suggested to the colonists that it would be a great boon to them if a cargo of these hogs could be brought to Virginia. So Somers, good and brave man as he was, volunteered to go back to the islands for the purpose, and set forth in the pinnace which had brought him to Jamestown.

He reached the islands, but his labors had undermined his health, and he died in Bermuda shortly afterward. His heart was buried there, but his body was taken by his companions, headed by his nephew, to England. A monument was set up to his memory in Bermuda. The islands were named after him in the charter subsequently issued, but the name of the original Spanish discoverer has persisted.

The two men who had remained on the islands while Somers went to Virginia, were able to live there until Somers' return, and when his nephew and the crew took his body home, a third deserted and joined the other two. They soon quarreled and two of them were only prevented from killing each other in a duel by the third's hiding the weapons.

Washington Irving, whose travels took him to Bermuda, celebrates this triumvirate in a short story he called "The Three Kings of Bermuda."

POSSIBLY THE SCENE OF SHAKESPEARE'S "TEMPEST"

Somers was accompanied on these trips by two men, Sil Jourdan and William Strachey, who wrote and published accounts of the storm, the wreck, and of the marvels of the islands.

Jourdan's book was published in England in 1610. William Strachey went to England in that year and settled in Blackfriars, where Shakespeare then was living.

Shakespeare published his play of "The Tempest" some time not later than 1614, probably as early as 1611. Malone, one of the early commentators, became convinced that Shakespeare intended to make the Bermudas the scene of his play, and this view has been accepted by many. Thomas Moore, who lived in Bermuda for a time, assumed it, and Kipling is an enthusiastic supporter of Malone's view and finds a beach in Bermuda where one of the scenes might well have been enacted.

The theory is that Shakespeare read Jourdan's book and account of the storm and talked it over with Strachey, whom he must have known in 1610, because they were close neighbors, and Shakespeare was wont to draw his knowledge from those whom he met in daily life.

Resemblances to the circumstances detailed in Jourdan's and Strachey's accounts of the storm and wreck of the *Sea Venture* are traced in the lines and scenes of the play.

Photograph by Central News Photo Company

A FIELD OF LILIES WITH MORE THAN A MILLION BLOSSOMS OF THE FAMOUS FLOWER THAT IS EMBLEMATIC OF THE EASTER SEASON

The godfather of the Bermuda Easter lily was James Richardson, of Hamilton, who began its cultivation about 1870. It is not as extensively cultivated on the islands as in former days, when as many as 100 flowers were sometimes produced on one stem.

One of the narrators tells of a fire that played along the deck and on the masts and yard of the *Sea Venture* during the overwhelming heavenly artillery of thunder and lightning. This was doubtless an electric phenomenon which the Spaniards called St. Elmo's fire. Ariel the Sprite, in answer to Prospero's inquiry whether he had performed the task to which he had been bidden, says:

"To every article.
I boarded the king's ship: now on the beak,
Now in the waist, the deck, in every cabin
I flam'd amazement: sometimes, I'd divide,
And burn in many places; on the topmast,
The yards and bowsprit, would I flame distinctly,
Then meet, and join."

Ariel saved the whole ship's company, and when asked how he had disposed of the ship and the sailors, he answers:

"Safely in harbour
Is the king's ship; in the deep nook where once
Thou call'dst me up at midnight to fetch dew
From the still vex'd Bermoothes: there she's hid."

Here Shakespeare, it is supposed, followed the details of Strachey's story, and the mention of Bermuda in the Spanish form of the name, it is insisted, confirms the view.

The eagerness to fix a place and give geographical definiteness to Shakespeare's plots is characteristic of many of his commentators. It is less reasonable in respect to the light and beautiful fancy of "The Tempest" than in the case of any other of Shakespeare's plays.

RIVAL ISLANDS IN MEDITERRANEAN

Hunter, while repudiating Bermuda's claim, fixes the scene in Lampedosa, a haunted island in the Mediterranean somewhere near the course which the ship bearing the King of Naples from Tunis to Naples might have taken. It is an island which has a cell and a cave and often has near it the fire of St. Elmo. Another critic scouts Lampedosa as too far to the southeast, but finds another island, named

Pantelaria, in the Mediterranean which he thinks much more likely.

Furness, our own great Shakespearian scholar, the editor of the Variorum edition, rejects the suggestion that the poet intended to make Bermuda the scene of the play. He points out that the mention of "still vex't Bermoothes" by Ariel is in reference to a place *from* which dew was to be brought to Prospero's Isle, and so was different from it. He says: "The islands are called 'still vex't'—that is, *constantly, always vext*—by tempests, from accounts of them which voyagers brought home and which were so unvarying in their character that, as Hunter says, the Bermudas became a commonplace in Shakespeare's time, whenever storms and tempests were the theme."

Photograph by Emil P. Albrecht

"THERE'S NO REST FOR THE WEARY"

It would seem that the "strength" of the famous Bermuda onion is not sufficient to aid this bored young carrier!

Lowell, in his "Among My Books," disposes of the matter in the most satisfactory way. He says:

"Shakespeare is wont to take some familiar story and to lay his scene in some place, the name of which is at least familiar, well knowing the reserve of power that lies in the familiar as a background when things are set in front of it under a new and unexpected light.

"But in 'The Tempest' the scene is laid nowhere, or certainly in no country laid down in any map. Nowhere then? At once nowhere and anywhere, for it is in the soul of man that still vexed island, hung between the upper and the nether world and liable to incursions from both."

FINDING OF AMBERGRIS QUICKENS INTEREST IN BERMUDA

The glowing reports of the historians of the Somers voyages, including Somers himself, in respect to the Bermudas sharpened the interest of the Virginian proprietors in the islands.

Their original charter only gave them jurisdiction over all islands within 100 miles of the mainland, which, of course, excluded the Bermudas. So they soon, in 1612, procured an additional grant, to include all within 300 leagues.

Their business instincts were aroused not only by the reported richness of the islands in hogs and fish and tobacco, and in the abundance of whales in the neighboring waters, but in the finding of a substance called ambergris, which plays a considerable part in the early correspondence between the English owners and the colonists of Bermuda.

Ambergris is literally gray amber. It is a solid fatty, inflammable substance of a dull gray or blackish color, variegated like marble, and possessing a peculiar sweet, earthy odor. It is lighter than water and floats. It accumulates in the liver or intestines of the sperm whale and is thrown off by that animal from time to time in great pieces, which, floating on the surface of the sea, become lodged in the reefs and shores near the habitat of the sea monster.

Photograph by Emil P. Albrecht

A COAL SCHOONER AT HAMILTON, BERMUDA

Bermuda is admirably situated for a coaling station on the trade routes leading to the Panama Canal and to Gulf of Mexico ports, but present facilities are inadequate. Hamilton cannot be converted into a coaling port because its harbor is small and is too far from the open sea, but the same objections do not apply to the land-locked harbor of St. George (see illustration, page 16).

It is found sometimes in chunks weighing all the way from fifty to two hundred pounds. It was then and is still eagerly sought as the basis of perfumery and was once used in pharmacy and as a flavor in cooking. It was so highly prized as to bring several pounds sterling an ounce in the London market.

The instructions of the proprietors to one of the earliest Bermuda Governors show their hopes and fears. They say: "As touchinge the findinge of Ambergreece upon shore which is driven up by every storme where the wind bloweth, we would have you remember that by such as you appointe to that business . . . you may be deceaved of the best and fayrest except you be very carefull in your choice of honest men."

COMPANY OF 120 ADVENTURERS BUY THE ISLANDS

After amplifying the Virginian charter to include the Bermudas, 120 of the Virginia adventurers bought for £2,000 sterling all the rights of the original Virginia proprietors in the Bermudas, and a new company was incorporated by James I in the name of the "Governor and Company of the City of London for the Plantacon of the Somer Islands."

This charter was not granted until 1615, but the purchasers had sent as their representative and Governor one Moore, a carpenter, with fifty settlers, who landed in the islands in July, 1612, to find that "the three kings of Bermuda" had been able to make the islands the scene of great disturbance in their tripartite reign.

The charter gave the islands in fee to the Company. It provided for its organization in London, with a Governor and twenty-four assistants, naming the first Governor and providing for the election of his successor and the discharge of the business of the Company at quarterly meetings.

It gave to the Company the islands, with all fishing, mines and minerals,

pearls, precious stones, and all and singular other commodities, reserving only one-fifth of the gold and silver. It gave to the corporation power to make such laws and ordinances as were not contrary to the laws of England.

It directed that with all convenient speed the islands be divided, that one-quarter of the land be reserved to the Company for defraying public charges, so far as necessary, and that the remaining profits of that one-fourth be allotted to each member according to his holdings. The residue, three-fourths of the islands, were to be divided into eight parts, or tribes, containing fifty shares of twenty-five acres each.

No one man was to own more than ten shares, unless the Company consented, and then not more than fifteen. The people living in Bermuda were to have the rights of British subjects, but the Company was to have the full power to correct, punish, pardon, and govern and rule such subjects. Imports and exports were limited to trade between Bermuda and the Mother Country.

LITTLE CHANGE IN GOVERNMENT THROUGH THE CENTURIES

The first Governor sent out to the colony was Daniel Tucker, gentleman. He had been an early settler in Virginia and was a cousin of the ancestor of that well-known Virginia family.

The Company gave him instructions upon which the government of the colony was framed. Less than in any of the countries of Great Britain has that government been changed today.

The officers of the colony were to be Governor, sheriff, and secretary. There were to be four ministers, one to each two parishes, and land or glebes were to be set aside for each of £100 a year value.

The council of the colony was to be the Governor, the sheriff, the secretary, two of the ministers, two captains of the chief forts, and the first of the overseers of the public land. The Governor and whole council were to sit as judges at general sessions twice a year, and would hear appeals from the Governor and a part of the council who sat and rendered judgments at the assizes.

The Governor was also required to hold every second year a general assembly for the making of laws and orders for the particular necessities and occasions of the islands and the inhabitants thereof, and for the ordering of other important business, which were to be of no further effect when not confirmed by the Company in London.

In the assembly the Governor presided and had a veto. The council were to sit next him, and if they all agreed they might also negative action. Each tribe was to select for its representatives four able persons. These were to have free voices in the assembly and "therein all things were to be established by plurality of voices, the foresaid negatives preserved."

THE BERMUDA ASSEMBLY LASTED 120 YEARS

The first general assembly was held in 1620 and another in 1622. Only one earlier legislative assembly was held in North America, and that was in 1619, in Virginia. The Bermuda Assembly, as constituted in 1622, lasted for about 120 years, and the union of the Governor and the council in the session was regarded as so important that one Christopher Parker, in 1627, was prosecuted as seditious for proposing to make an upper and lower house.

In 1674 the London Company made formal charges against the assembly because the Governor and council sat separately. After that the Governor did not call an assembly for ten years. The appropriation by the Governor of all legislative power for a decade resulted, as did a similar course on the part of Charles I, in the cutting off of the corporate head. By a proceeding in *quo warranto* the Company was ousted of its privileges and the Bermudas became a colony of the Crown, with a continuing assembly.

In 1730 two legislative bodies were created, the Governor and council and the assembly, but the assembly continued to be made up of the four members from each of the eight tribes and four from the common land, or ninth parish, and is so constituted today.

There are two councils today, the executive and legislative councils, with many of the same persons members in both. With these changes, the assembly which sits in Hamilton, Bermuda, today is the

Photograph by N. E. Lusher and Son (from Florence Root-Foster)

ST. GEORGE HARBOR, BERMUDA

This little town, formerly the capital of the islands, is intimately associated with early American history. From its harbor sailed two ships which carried supplies to the starving colony at Jamestown, Virginia, and from its Fort William the American revolutionists obtained a supply of gunpowder which caused the British to evacuate Boston. In the old church is a silver communion service which was presented to Bermuda by William III in 1684.

same body which met in a parish church in St. George three hundred years ago.

There is no people I know in this hemisphere who have shown the same love of the past, the same adherence to the old-time traditions, as the members of this Lilliputian domain, which had its origin in the wrecking of the *Sea Venture* under Sir George Somers. The same tribes exist under same names as prescribed in the charter of James I of 1615.

The survey which fixed the division lines of those tribes was made by an able surveyor, Norwood, before 1620. He divided the island into eight parishes, and in one of the parishes there was an "overplus," as it was called, of nearly 300 acres which Governor Tucker took possession of and on which he built a house. The historian suggests that this incident would have been called a job in modern days.

In 1662, Norwood, the Surveyor, prepared a careful map showing the shares and their ownership, which, as General Lefroy says, are preserved in a well drawn map and constitute the Domesday Book of the islands.

The parishes vary much in population. Some are small in number of people and are much over-represented in the assembly, but the people, though often urged, will not remove the old landmarks.

The history of no other self-governing colony can be so clearly traced as Bermuda, and in the case of none other is its intimate family history of its early days made so familiar. For this we are indebted to the happy circumstance by which the records of the meetings of the Governor and council in the assizes of the general sessions and of the general assembly, which had been for near a century mere bundles of old papers in the custody of the clerk of the council, were examined by General L. H. Lefroy, Governor from 1871 to 1877, and were by him compiled.

General Lefroy supplemented these records with others from the Mother Country and arranged them all in chronological order, with helpful comment and preliminary digest. So successful was he in his work that the staid Assembly of Bermuda assumed the heavy expense of publishing the two large volumes.

Of course, the records are somewhat fragmentary, but they are sufficiently full to bring one close to the life of this island community, and to enable us to note their customs, their ambitions, their quarrels, their religion, their failings, their vices, their methods of government, and their curious administration of justice.

I have said that the general assembly and the councils have changed but little since they began, three hundred years ago. The great change has been in the establishment of a separate court.

GOVERNOR ONCE COMBINED EXECUTIVE, LEGISLATIVE, AND JUDICIAL DUTIES

In the early days the Governor seemed to unite in his person legislative, executive, and judicial duties. He presided over the assembly, took part in its deliberations, voted on measures, and vetoed them. As Governor, he executed the laws and regulations he helped to make. Under the English constitution, in the royal courts, the judges were appointed by the king and acted for him.

The king might sit in the court with them, but in fact he never did. In Bermuda the theory by which the courts were acting in the name of the executive and for him was realized in fact; so that, with his council, he administered justice. Sitting with a somewhat larger council in general session, he acted as a court of error.

Even after separate courts were established, the Governor and the council continued to act as a court of equity and to be a supreme court of error.

Now properly much of this has been abolished by the establishment of the Supreme Court, presided over by a Chief Justice appointed by the Crown of Great Britain. This Chief Justice is a member of the legislative council, and so in separate body acts in a legislative capacity as well.

The Supreme Court exercises jurisdiction both at law and equity, and there are in certain cases appeals to the judicial committee of the privy council.

I asked the Chief Justice in respect to this appellate jurisdiction of the privy council, and he said that in his term of some years no appeal had ever been taken and perfected. And he could not remember one in the island history.

In spite of the fact that the forms of government have been but slightly changed in Bermuda, the spirit of con-

Photograph from S. S. Spurling

WITCHES WERE ONCE TRIED AND CONDEMNED TO DEATH IN THIS ROOM, NOW USED BY A MASONIC LODGE: BERMUDA

This was the old State House at St. George, built before 1620 and used for the meetings of the legislature and courts of justice until 1707, when the capital was transferred to Hamilton. Executions for offenses that today would be considered trifling were carried out in front of its doors. A record in this building shows the execution of one Joseph Jones for stealing a pair of artilleryman's socks.

tention between the Governor and council, on the one side, and the assembly, on the other, has greatly improved.

STUDY IN POPULAR GOVERNMENT

The power of the assembly, which in the beginning, as indeed in the beginning of most popular governments, is only a petitioning and advisory body seeking action by the executive, who draws all power to himself, acquired an independence and power in the making of laws and the appropriation of the people's money which gives it really a very different character from what it had in the beginning; and these changes it is interesting to study in Bermuda, because they furnish a typical illustration of the growth of popular power through the assertion by the Anglo-Saxon of his self-conceived rights.

The franchise in the island was not given to the residents, but only to the owners of shares into which the tribes and the commons were divided, so that the electorate was very much smaller than the male residents. Indeed, even now, as I recollect it, in a population of some 20,000, there are not more than 1,250 electors.

For a man to be an elector he must have property which is assessed as worth at least 60 pounds a year, and this requirement was doubled from 30 pounds a year when slavery was abolished, in 1834. In other words, we must realize, in calling that of Bermuda a popular government, that it is a government of landed holders and not of manhood electors; that this fact has had a marked effect upon certain conditions which now exist in the islands, to which I shall refer later, and that it is retained as one of the strongest indications of the deeply conservative character of the Bermuda community.

The history of the Colony of Bermuda from 1620, when the first assembly met, until 1684 or 1685, when the Company was ousted of its charter by *quo warranto* in the King's Bench in England, is made up of the struggles of the Company in London to make as much out of the colonists as possible; of the struggles of the colonists to remove the restrictions on trade with others than the Company, imposed upon them by the proprietaries, and of the efforts of governors sent out to the islands to maintain order, enforce the rules of the Company, and defend their authority and exercise too-often arbitrary power.

In the beginning the proprietaries were greatly misled as to the wealth of the islands and their resources. They counted on substantial income from the finding of ambergris already described. It is the rare finding of this anywhere that gives it so great a value, and the Bermudas were no exception in this regard.

Another source of revenue to which the island Company looked was that which came to be made from wrecks upon the islands. The early history of the islands gave ground for much ghoulish hope. The Company, therefore, reserved to it forever the moiety of all lawful wrecks and the remaining moiety was given to the recoverers. If the wreck was driven on to a man's property, then the recoverer and the owner were to share the moiety.

There is an amusing story of the wrecking of a vessel on the islands upon a Sunday. The news of it leaked into the congregation, situated near where the vessel seemed likely to strike and break.

The minister, who heard the news, rose and implored his congregation not to leave during the service, but to wait until he concluded, when all might start even.

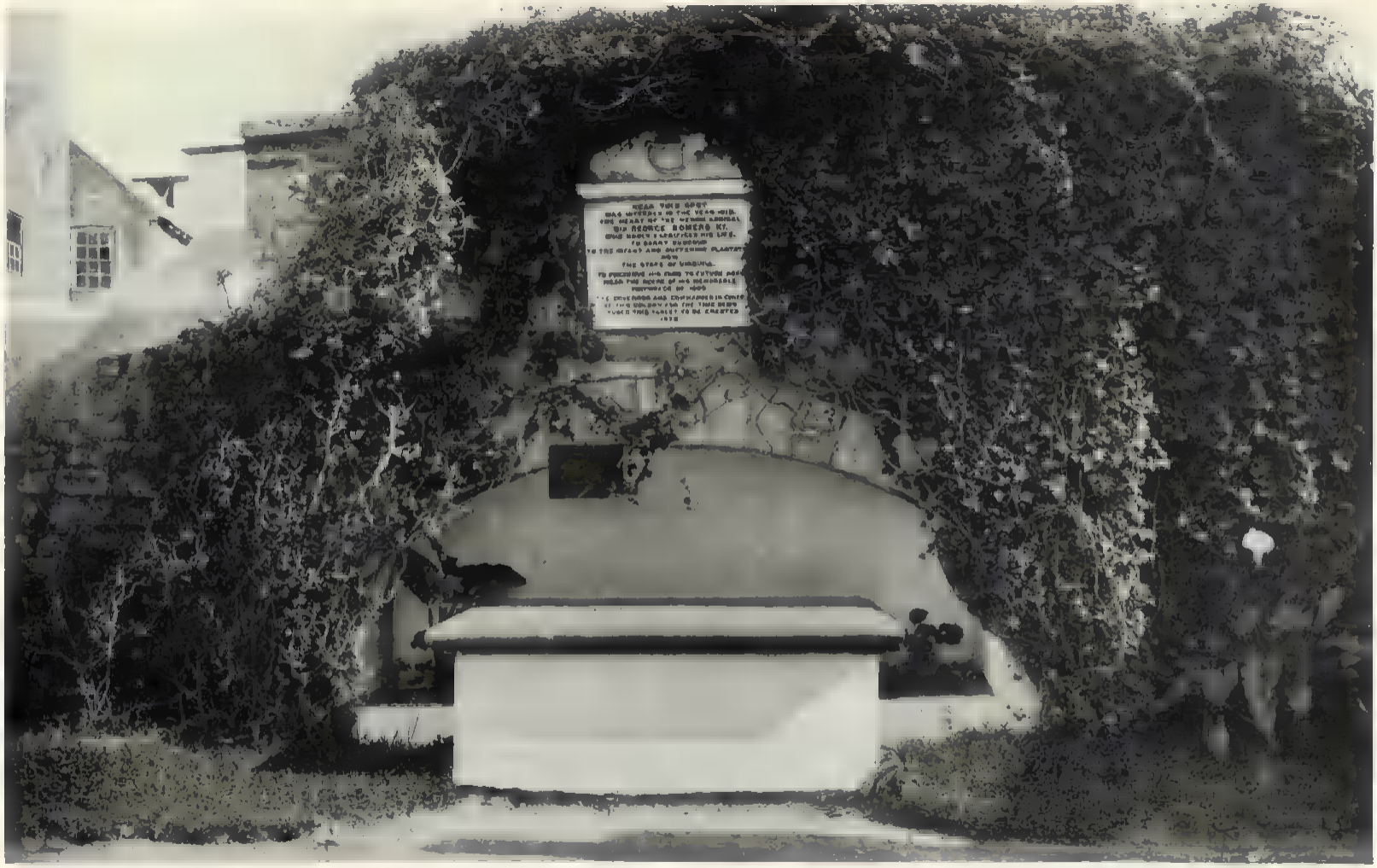
The complaints show that the Company had great difficulty in collecting its half of the plunder. The Company expected profit by the whale fisheries, but whale fishing is not free from danger and hard work, and the restrictions put upon it and the license required to engage in it discouraged that pursuit.

TOBACCO CHIEF PRODUCT OF EARLY DAYS

The chief agricultural product of the colony, as indeed of Virginia, in early days was tobacco, and for a time the Company, by compelling a sale of it at a low price, was able to realize a somewhat handsome profit.

But, as was natural, the colonists, knowing that the tobacco which they raised was worth so much more than the price paid, were negligent in its cultivation and in its curing and packing.

The communications of the Company are full of complaints on this score. In the early part of the 18th century the



Photograph from S. S. Spurling

THE TOMB OF ADMIRAL SIR GEORGE SOMERS: ST. GEORGE, BERMUDA

While the Bermudas were discovered before 1515, by Juan Bermudez, a Spaniard, their history really dates from 1609, when the British Admiral Somers, in the *Sea Venture*, was wrecked here (see text, page 9). Admiral Somers' body was removed to England for burial, but his heart, appropriately, was left in Bermuda.

growing and curing of tobacco was largely given up.

It may be said for the Company that it seemed very anxious that the colonists should have religious instruction, and that their children should have education, so far as their declarations can be credited; but the grievances of the colonists included frequent complaints that they had not ministers of religion enough, and they used this to meet the charges of the Company as to the prevalence of drunkenness, idleness, incontinence, and general immoral tendencies.

There were very few governors whose administration of the regular three years' term or longer was not full of discussion and conflict of authority. Few governors went out of office against whom some suits at law for abuse of authority and false imprisonment were not brought as a reward of their administration.

In the days of the Company, the governors used questionable authority to punish the slightest infraction of what they regarded as proper rules of conduct.

Governor Tucker, sitting as the head of the assizes and in the general session, did not hesitate to sentence a man and execute him for having made a speech against him and his government.

The controversies continued, but the people held tenaciously to their rights, and the recognition of the power of the assembly grew more and more apparent as the years wore on. The men who took part in these controversies were chiefly the descendants of those who had figured in the same discussions since 1620.

The merchants, wholesale and retail, the farmers, and all the business men today have still among them, as influential leaders, the descendants of those who were prominent during the thirty decades since Daniel Tucker assumed authority as Governor under the charter of James I.

It is interesting and curious to note the minute supervision that the court of assize, sitting as a kind of grand jury and court as well, exercised over the lives of the colonists.

In the assize and session of 1618 we find a widow presented by name on suspicion of incontinence; William Pollard, gentleman, for that he doth not forbear to use himself unreverently in the church and, contrary to religion and the discipline of the Church of England, hath refused or neglected to receive the Holy Communion; certain churchwardens for not providing communion wine; a married couple for not living together according to the ordinance of God; two men for playing unlawful games, and other such like disorders.

These presentments, as General Lefroy says, were no laughing matter, for thirty lashes at the church door frequently followed.

THE CLERGY AND THE GOVERNOR WERE OFTEN AT ODDS

Some of the ministers who were sent were graduates of Cambridge and Oxford and were vested with considerable authority, and at times did not hesitate to differ with the Governor.

The Governor did not, on his part, hesitate sometimes to imprison them, and when he left office he usually found a suit for false imprisonment as one of his rewards. So common was this that the assembly passed an act in behalf of ministers, providing that all of those sent home or imprisoned by the Governor should be entitled to their pay *in interim*, unless justly proceeded against.

One of the great complaints which the colonists had to make was of the necessity for buying their supplies from the stock furnished by the Company, and out of this the Company doubtless made substantial profit.

The number of colonists had reached 2,000 in 1629, and although there were variations from time to time, there has been a gradual increase, until now there are about 20,000 people.

A number of those who owned shares in the Company came over to join them in the colony, and the English noblemen who were among the 120 proprietaries parted with their interests.

From time to time complaint was made of the character of the colonists who were sent there. They were taken from the jails and bridewells, and did not add to the morality or economic strength of the community. One very energetic Governor named Butler procured a resolution protesting against "the overaged, diseased, and impotent persons who were being sent over to us, and so are to rest and remain here as drones and horse-leaches,

Photograph from S. S. Spurling

A FISHERMAN'S LUCK IN BERMUDA

Bermuda fishermen enjoy much the same advantages as do those off the Florida coast (see "Certain Citizens of the Warm Sea," pages 27 to 62).

living upon the sweat and blood of other men. No greater canker can there be to a new settled plantation than the stuffing it with idle and unprofitable persons, whose bellies for the most part are extraordinarily craving and their mouths ravenous."

If a man in bravery of apparel exceeded his degree, and if after admonition he did not reform the same, he was in respect of all public burdens to bear the double to any other, and was declared infamous.

In the class of infamous persons were those who were idlers after admonition; who were vagrants; who were drunkards or common haunters of tippling-houses; who were common spenders of their time in dicing, carding, or other kinds of unlawful gaming; who were common raisers of quarrels among neighbors. When infamous they were incapable of holding office, and they were not permitted to sit or stand in church with the rest of the congregation, but in a lower place by themselves, in the meanest place everywhere.

The records are full of convictions of persons who, having spoken contemptuously of a governor or minister, were imprisoned and only released after serving a time, upon signing a confession and repentance.

In 1669 Governor Haydon issued the following to his provost marshal:

"7 MARCH, 1669.

"To Mr. JOHN BRISTOWE, JUN'R,
Provost Marshal.
By Sir John Heydon:

"Whereas Wm. Deane of St. George's Mariner hath bin a man of deboshed life and conversation, more especially since his marriage, and hath bin admonished by Magistrates to reform, and yet notwithstanding favour formelie shewed him, hee hath not seased to tell his neighbor (videlicet) Mistress Katherine Shaw that he did not care a —— for her nor for Mr. Samuel Smith (the minister) neither and bid her goe and tell him soe; with addition of many other reprochful languages unto her the said Katharine, for noe other cause, then only that shee came to his house upon her hearing of him notoriously abusing and beating his own wife as formerly he hath done. These are therefore to require and authorize you forthwithe to take the said William Deane, and him whip, or cause to be whipped uppon

the nacked bach with thirtie stripes. Whereof fayle you not, and for your so doing this my warrant shall be your discharge. Given under my hand the 7th day of Sept. 1669.

JOHN HEYDON."

CHANGES IN MOTHER COUNTRY QUICKLY REFLECTED IN BERMUDA

The change from the Company's control to the control of the Crown did not relieve the Bermudian community of dissension and discussion between the governors and the assembly.

There were reflected in the life of the colonial community the political, religious, and social conflicts of the Mother Country and the other colonies.

The controversy between Charles I and his parliament brought about a division in the islands, but after one or two years the prevailing government in England was fully recognized in the islands. So, too, the fights between the Church of England and the Independents and the Presbyterians arose, religious prosecutions and persecutions were maintained and fought, and the Church of England went out with Cromwell and returned with Charles II.

The prosecutions for witchcraft had their vogue. There were 20 presentments and five were hanged.

The Quakers sought the islands, and were persecuted and made defense. They did not seem to have been as violent in their demonstrations and in their interference with public worship as elsewhere, and none were given more than mild punishment, though some foreign Quakers were banished.

Slaves were introduced into the islands as early as 1632, and slavery continued to be an important institution in the social and economic life of the islands until its abolition, in 1834. For a time the industry of the islands was agricultural, the cultivation of tobacco, and slaves were an important aid in it.

The refusal of the Company to allow the use of the cedar trees as timber for the construction of ships prevented maritime pursuits. In the 18th century, however, as a result of a change to the direct government of the Crown, the restrictions on the use of lumber were removed, and for a considerable period the Burmudians abandoned agriculture and devoted themselves most successfully to the carrying trade between the American colonies and the West Indies.

In that time agriculture was confined to the negroes and became a despised pursuit. Because of this, from time to time there was famine in the islands, which could only be relieved by illicit trade, contrary to law, with the American colonies.

It was during one of these periods of famine and suffering among the Bermudian colonists that the Revolutionary War broke out in the United States. Washington was in desperate straits on account of a lack of powder, and a vessel from Philadelphia went to Bermuda and, with the connivance of the colonists, for it could not otherwise have been done, broke open the powder magazine and took the entire supply aboard the ship and conveyed it to Philadelphia.

This was during the incumbency of Governor Bruere, who was at sword's point with the assembly and the colonists. He immediately and rightly charged that the achievement was due to the treachery of the inhabitants.

ONCE AS FORMIDABLE AS GIBRALTAR

The importance of Bermuda to the Mother Country has been as a British fortress and naval station. Protected from attack by the outlying reefs, and with its strategic advantage in respect of the West Indies, Great Britain has spent a great deal of money in the past in establishing a naval station, in fortifying the port, and in building quarters for an army garrison. During this period of preparation there were sent to the islands, 9,000 long-term convicts to work upon the docks and the naval station and to build roads through the islands. The evidences of this work of engineering construction meet the visitor on every side.

Bermuda was at one time considered as formidable as Gibraltar; but what the result of naval long-range artillery would be in an attack upon the islands I am not military expert enough to judge. Certain it is now that the importance of the islands as a military garrison is not made apparent. There are but few troops there and still fewer ships.

It is gratifying to know that here, as elsewhere, Great Britain refuses to con-

Photograph by Emil P. Albrecht

A WRECK OFF THE BERMUDA SHORES

Much of the history of the Bermudas has been born of shipwrecks. Sir Walter Raleigh referred to the waters in the vicinity of the islands as "a hellish sea of thunder, lightning, and storms," and many commentators believe that this was the scene of Shakespeare's "The Tempest."

sider the possibility of conflict with the United States; and while she continues to send some of her best soldiers and sailors, the one to be governors and the other to be admirals, in charge at these headquarters of the North American station, it is perfectly evident that the proximity of Bermuda to the United States has little or no bearing on British policy in this colony.

The fact, however, that Great Britain did spend a great deal of money in preparing Bermuda as a fortress had marked influence upon the economical fortunes of the islands, and has enabled the islanders to secure a system of beautiful roads and extensive public works impossible otherwise.

When the trade between the United States and the West Indies became free, some little time after the War of 1812, the Bermudian mariners could not meet the competition of our sailing ships and those of the Mother Country, and the islands were driven again to agriculture.

THE REAL WEALTH OF BERMUDA—EARLY VEGETABLES

Under a British general, who was Governor, General Reid, in 1840, great progress was made in developing what is the real wealth of the islands, their adaptability to the raising for the markets of the United States early vegetables. The Bermuda potato and the Bermuda onion have attained a just reputation for excellence in those markets, where a high price can be obtained for them as one of the luxuries of the table.

The effect of the abolition of slavery was not so marked in the islands as with us. It was a peaceful change, and while every family in the islands had slaves, they were rather domestic servants, few in number for each family, and not large groups, as with us, engaged on large plantations; and, while some years before Bermuda slave owners manifested great opposition to the anti-slavery movement, on the whole they were quite well satisfied to have the change made, accompanied, as it was, by the payment to them in round numbers of $600,000 for the six thousand slaves whom they held.

While the system of education in the islands is lacking much in thoroughness and should be greatly improved, there are enough schools to give to all of the negroes who seem to have a desire for education primary instruction.

With thirty years' start upon our own negroes in the matter of freedom, and without the bitterness created by a war whose cause was slavery, the Bermuda negroes have on the whole made more progress than our own colored people and seem more contented, though not more progressive.

ONE MAN MAY HAVE SEVERAL VOTES

No man can be a member of the assembly unless he possesses a freehold rated at $1,200, just as one who votes for him must own a freehold rated at $300 annually. A freeholder may have several votes—that is, he may vote in each parish in which he owns enough to constitute himself a voter.

In 1908 there were only 1,298 electors, and of these 852 white and 446 were colored, although the population was two colored men for every white man.

The result of these restrictions on the franchise and character of the representatives is that there are now in the legislative assembly but two colored men. As already said, these provisions make the islands a representative government of the landed owners.

The beauties of this island home, its fine climate and scenery, its convenience of access from the United States, its efficient government, attract from the United States a large number of visitors during the colder and uncomfortable seasons of the year. Indeed, in time past there have been as many sojourners in the islands from the United States as there were permanent residents.

The payments of these visitors, together with the value of the exports of early vegetables, are the sources of the income of the islands. Their revenues for the maintenance of the government they derive from an *ad valorem* duty of 11 per cent. This enables them to carry on the government and to maintain its dignity and the forms that, with their conservative tendencies, they love to maintain.

The land-owners pay no general tax on their land or property. No man is compelled to pay an income tax, for the income tax levied by Great Britain does not

apply to British subjects beyond the British Isles. There are some small parish dues which the land-owners pay, but they are insignificant. Nowhere in the world, I venture to think, are the taxes lighter than in the islands.

Under these circumstances, with the government as it is and the control where it is, we are not likely to see a change.

The people one meets there as a visitor are agreeable ladies and gentlemen, of cultivation and refinement. They keep abreast of the times, but they are content with what they have. Trollope, who visited the islands in 1858, was not very gracious to them, but one thing he said of them has much truth in it:

"To live and die would seem to be enough for them; to live and die as their fathers and mothers did before them, in the same houses, using the same furniture, nurtured on the same food, and enjoying the same immunity from the dangers of excitement."

The beauty of the island scenery and its unique character need but a word. The prevailing background in every landscape is the green Bermudian cedar, or juniper tree, and dotted in this general background are the white houses of the cities and the country.

The beautiful roads add to the dazzling white of the picture. They are made of coral rock, which packs and cements itself. Mark Twain said that, after thinking over what it reminded him of, he hit upon exactly the right description of its color and effect when he called it icing on a cake.

The roads are not wide enough and the curves are too sudden for automobiles. The chief objection to them is their slipping character after the frequent rains. Horses frequently fall on a down grade.

The cities, Hamilton and St. George, are not large, and the population is well distributed through the islands. In most countries the population of 1,000 to a square mile is thought to be fairly concentrated, and that we have here.

In the early days the colonists lived in houses built of cedar. Now they live in houses built of coral rock. It is usually cut on the premises. As Howell says:

"What will be said to you when you tell that in the Summer Islands one has but to saw a hole in his back yard and take out a house of creamy sandstone and set it up and go to living in it?"

There are two things in the islands that determine much of social economy: One is the presence of this building material, which can be sawed out with a hand-saw and after some exposure is ready for use (see illustration, page 8), and the other is the total absence of wells.

It is necessary to get all drinking water from the clouds, and that, as a measure of health, requires that every roof from which the water is to be derived should be kept clean by whitewash.

The palace of the rich man and the hovel of the poor man are equally white, equally substantial looking, and equally clean; and this circumstance furnishes singular superficial evidence of the fairly equal distribution of wealth and comfort in this little community.

LESSONS IN THE PURSUIT OF HAPPINESS

From the happiness that seems to prevail, from the philosophic contentment with which the people of these islands look out upon the rest of the world, we may derive many lessons with respect to our pursuit of happiness, which the Declaration of Independence postulates as one of our rights.

Notwithstanding the close business relations between the United States and the people of Bermuda, they are English in their traditions, their descent, and their sympathies. They were the center of the blockade-running during the Civil War, and their prominent people made a great deal of money out of that industry; and while in the result they lost much of what they had gained, their attitude of mind continues to be one of attachment toward the Mother Country. It fits into all their traditions, and, as I have indicated, traditions with them are as binding as steel.

The suggestion, therefore, that has been made by some of our public men, that we might buy the West Indian possessions of Great Britain, including Bermuda, in part settlement of the war debt which Great Britain owes us, has been made without knowing at all the temper and feeling of Bermudians in respect to such a severance.

Great Britain would not think of giving up the islands, and the Bermudians would not think of being given up.

CERTAIN CITIZENS OF THE WARM SEA

By Louis L. Mowbray

Director, Miami Aquarium and Biological Laboratory

EVEN man's most terrific wars against his fellows have a respite; they are but cataclysms in the normal course of the world; but the battle of fish against fish—furious, quarterless, to the death—is everlasting. So, within the warm balmy waters of the Gulf Stream off the Florida coast, where the lazy waves of the surface seem to typify peace, the never-ending Armageddon of the finny world rises to its highest pitch.

It is almost impossible for the human mind to conceive the continuous struggle for existence that in these warm seas goes on beneath the surface of the water. If such conditions existed on land and the resultant mental strain were not provided for by Nature, few would survive the constant tension upon the nervous system.

A fish starting in pursuit of another frequently attracts the attention of one of a larger species and is in turn pursued. Often, in southern waters, when an angler hooks a fish, and before it can be drawn into the boat, it is cut in two by the jaws of a larger enemy; for most carnivorous fish seem instantly to sense prey when one of their number is in trouble, and a blood lust becomes epidemic forthwith.

Even in the face of this ceaseless struggle, the waters of the warm seas teem with fish, reptiles, crustaceans, and other creatures. There Nature both pours forth and destroys life with unsparing hands. That species may survive, and even prosper, though surrounded by implacable enemies, she has given all creatures of these waters the power to reproduce themselves an almost unbelievable number of times.

OBSERVATIONS OF MORE NORTHERLY FISH

A single female fish, during the spawning period, holds potential life in numbers running into millions. It is estimated that a 6-pound mackerel produces 1,500,000 eggs at one time; a cod weighing 21 pounds, it has been computed, produces 2,700,000 eggs, and a 77-pound cod, 9,100,000; and a close scientific study and research show that a 13-pound pollock, of the cod family, produces over 2,569,000 eggs, and a 23½-pound pollock over 4,000,000 at one spawning.

THE SURVIVAL OF THE FITTEST

There is no better way to realize the keenness of the sea battle for existence than to picture the result if in the sea the lion should lie down with the lamb!

It is not difficult to imagine what would happen if these staggering numbers of eggs were not interfered with by enemies, if all the young hatched out were safe from violent death, and if the young females in turn soon began contributing their millions of eggs. The operation of this tremendous geometrical progression would in a few years fill every cubic foot of the seas, vast as they are, with living creatures; the oceans would be unnavigable—a compact mass of animal life.

The battle of the seas, then—the unending strife, the seemingly heartless preying of one creature upon another—has its definite need in the world's economy.

The strife of the seas takes many forms. Fishes that feed in shoals have a well-planned method for acquiring their living food, and the same procedure is carried out so often that it resembles the workings of an exceptionally well-trained body of soldiers.

When a shoal of smaller fish is located near the shore, the larger fishes encircle the shoal, herding it to an almost compact mass, occasionally darting into it and getting a mouthful. Sometimes they do not strike the shoal, but continue driving it as bait until somewhat larger fishes attack it. The great fish then proceed to feed upon those which have been lured by the original prey.

During the mêlée the surface water is lashed into foam, often for an area exceeding a mile, and the little fellows are jumping every way in their mad efforts to escape their enemies.

Photograph by A. W. and Julian A. Dimock

A TARPON DOING A FIN SPRING

Photograph by A. W. and Julian A. Dimock

THE FISH OR THE FISHERMAN?

This remarkable photograph, taken by Messrs. A. W. and Julian A. Dimock, shows the masterly fight put up by a hundred-pound tarpon. These huge fighters now and then leap into the boat in their endeavor to shake the hooks from their mouths.

Photograph by A. W. and Julian A. Dimock

TARPON LEAPING

This great fish, the "Silver King," dear to the heart of all sportsmen, was caught by the camera in the very act of shaking the hook from its mouth.

Then from the air above comes another menace to the safety of the panic-stricken legions. The seagulls, man-o'-war birds, and pelicans dart upon them as they break the surface in their mad efforts to escape the dangers of the sea.

It is possible to locate a shoal of small fishes by watching the birds which feed from the sea. These fly over the shoal, waiting for the inevitable attack of the larger fishes to drive the food they seek to a point of vantage near the surface of the water.

NATURE'S PROTECTION AND REGULATION

In addition to sheltering nearly every species of sea creature under the laws of chance by providing extreme prolificness, Nature has not failed to furnish other protective measures to offset somewhat the dangers that everywhere threaten to eliminate whole species.

Numerous cases are recorded where a certain kind of fish has been almost obliterated and for long stretches of time has been thought to be extinct, but in some manner a sufficient number of individuals of the species remained to find protecting shelter where they might live and propagate their kind.

THE SUPPOSED PASSING OF THE TILEFISH*

One case is that of the tilefish, of which much has been written. In the year 1882 vessels arriving in Philadelphia, New York, and Boston reported having passed through miles of dead fish of this species. From the various accounts, it was estimated that an area of from 5,000 to 7,500 square miles was thickly strewn with the dead and dying creatures. The number of fish in this area was computed to be in excess of 1,000,000,000.

Various reasons were advanced for this gigantic tragedy, the most plausible being that a very sudden drop in temperature along the northern edge of the Gulf Stream proved fatal to these warm-water fish. It seemed for several years that the species was almost totally wiped out, but recently tilefish have been rediscovered in great numbers in their former habitat.

* See "America's Surpassing Fisheries," by Hugh M. Smith, U. S. Commissioner of Fisheries, in the NATIONAL GEOGRAPHIC MAGAZINE, June, 1916.

It is not known where they retired until their numbers became strengthened, but the fact remains that this valuable food-fish is back again in normal numbers.

Among the coral reefs off Florida one frequently sees millions of the fry of some pelagic or surface swimming offshore species taking shelter in and about the skeleton ribs and plates of a wreck resting on the ocean bottom, yet easily discernible in the clear southern waters, which offers a harbor for a considerable number seeking safety. Not only does the structure of the abandoned ship provide hiding places, but the grouper family, which makes the wreck a regular habitat, acts as a guard for the smaller fish against their arch enemies, the jacks and yellow tails, which are in turn sought by the groupers as food. The fry thus frequently remain unmolested, as they are too small to make food for the groupers.

When the fry move from place to place, they usually do so at dusk or through the night, and then on the surface of the sea, where they find their principal food—plankton, the weak floating organisms, and nekton, the actively swimming animal life—which is more plentiful on the surface after the sun's rays are lessened.

A PARADOX OF PROTECTION

Many fishes of the warm seas are chameleon-like in their coloration and take on the color and hue of their surroundings for protection, while others seek the holes and crevices into which the pursuing fish is unable to follow.

Some fishes, to protect their young, carry their eggs in their mouths. Nature has so taken care of other species that they are hermaphrodite. Others live in the gill cavities of a greater fish. Some species of the sucking fish, as an illustration, utilize the gill cavities of larger fishes, such as the mola, or giant sunfish, and the sailfish, for this purpose.

Many live in other marine animals. The amia, for instance, lives with the animal in the large West Indian conch (*Strombus gigantus*), whose spiral shell so beautifully tinted on the inside was frequently used as a fireplace ornament a generation ago. While there finding protection, this little fish carries its eggs in

A TARPON WEIGHING 158 POUNDS, TAKEN IN FLORIDA WATERS BY MR. ALFRED SANFORD

The tarpon was one of the earliest of the large fishes for which sportsmen angled. Consequently it has been extensively advertised, and therefore is the most widely known of the sea fighters.

Photograph by Angel Rubio

BROUGHT TO THE NET: A HAUL OF FISH PHOTOGRAPHED JUST BELOW THE SURFACE OF A TROPICAL SEA

The fecundity of certain species of fish is amazing. For example, a 6-pound mackerel produces one and a half million eggs at a time, while a 77-pound cod produces more than nine million eggs (see text, page 27).

its mouth. Another species, the Fierasferer, lives in the sea-pudding, one of the Holothurians, or sea-cucumbers.

The sea-horse and the pipefish carry their eggs in external caudal pouches. And so it is that in probably thousands of other ways Nature makes provision for the offsetting of the constant cannibalistic warfare against life in the seas.

Into the battle for and against the multiplication of these species steps man, who, provided with human mind and intellect, looks to the sea for food, diversion, and for useful products of benefit to his kind. Industries have been built up which take countless millions of fishes yearly for food and other commercial uses.

THE LURE OF THE SINGING LINE

It is doubtful if there is any one except the biologist who appreciates the living things in the sea more than do sportsmen, who come in ever-increasing numbers to the fishing grounds for a try at their health-giving, out-of-doors recreation.

The big-game hunter of the land, when coming upon a bull moose standing clear of the woods and providing an excellent opportunity for a shot, will sometimes tremble so that he is unable to pull the trigger. So there is a thrill all its own in the striking of the tarpon, sailfish, or some of the other game fishes of the Gulf Stream. It has been said truly that one strike invariably means a convert.

Wary, strong, and of remarkable gameness, it is true that these wonderful fishes try the strength, skill, and endurance of even the best and most experienced angler; and, when the prize is finally landed, the successful one feels all the exultation of one who has waged a mighty battle and won.

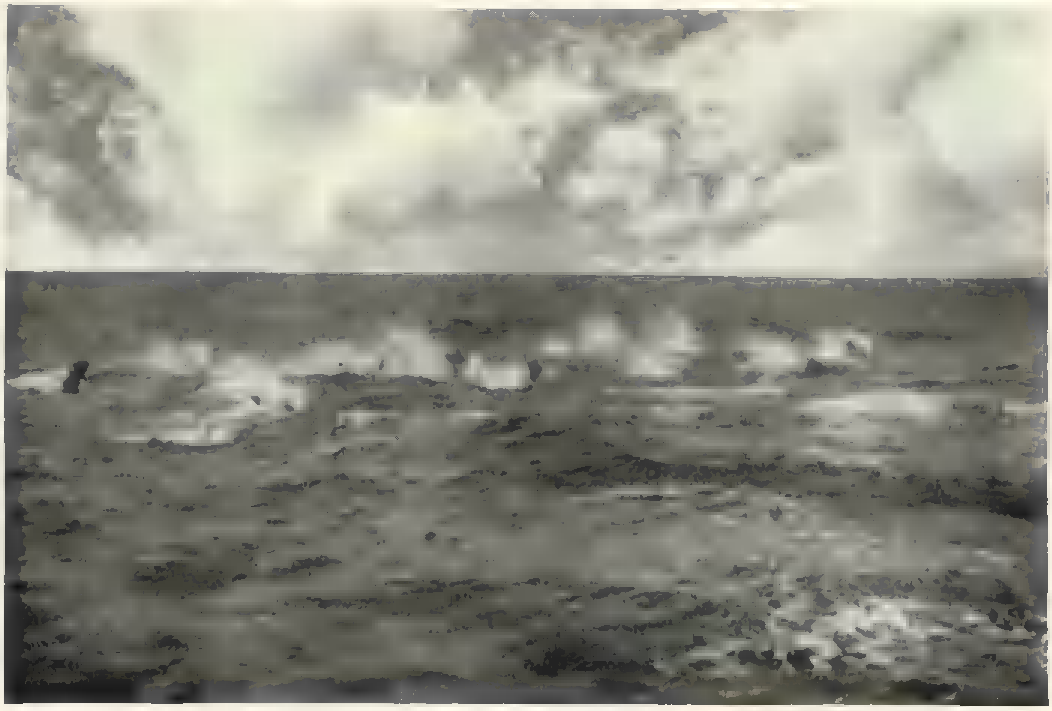
THE VALUE OF ADVERSITY

The tarpon in Florida waters, like the tuna or tunny in southern California fishing areas, is looked upon by the general public as the premier among game fishes and occupies a highly specialized place in the estimation of all persons of either sex interested in this sport. The "Silver King," as the tarpon is called, was one of the earliest of the large fishes for which sportsmen angled. Consequently it has been the most extensively advertised

Photograph by Van Campen Heilner

THE SOUTHERN PORPOISE, SOMETIMES ERRONEOUSLY CALLED DOLPHIN

The great flats of the Bay of Florida is one of the favorite feeding grounds of this swift and graceful fish. When harpooned it puts up a long and thrilling battle.



Photograph by John O. La Gorce

A SCHOOL OF PORPOISE MIGRATING

The porpoise in great schools move up and down the Atlantic coast during certain periods of the year. They are said to devour their weight in fish every forty-eight hours.

through word of mouth by pride ful captors and in song and story, and so has come to be more widely known than its competitors. Such is the value of advertising.

But while many worship at the shrine of the tarpon, some of the more experienced sportsmen, equipped with light tackle, esteem just as highly, if not a grade higher, the gameness of other fighters of the warm seas, such as the sailfish, the wahoo, and the bonefish. The bonefish of recent years has become particularly popular among sportsmen, and world-wise anglers journey even from Europe to Florida to match their ability with this animated steel spring.

The tarpon is abundant in Florida waters, on both coasts, where hundreds of sportsmen, winter and summer, seek it for the thrill and pride of capture it provides. When one is caught with rod and reel, it leaps repeatedly from the water, and as the sunlight plays upon its glistening scales while the angler battles constantly to prevent it from freeing itself during the struggle, the thrill must be experienced to be fully appreciated.

This best-known of the larger game fishes of the sea is bluish on the back, with its under parts and sides a wonderful, glistening silver (Color Plate X). Its scales are large and iridescent and are utilized in the making of numerous fancy articles which find a ready market as souvenirs of the habitat of the tarpon. Little is known of the breeding habits of the tarpon, but very young individuals are found in brackish waters, where they remain until strong enough to enter into the life struggle of the deep.

THE SAILFISH A CLOSE COMPETITOR FOR POPULARITY

The sailfish is considered a highly desirable fish to encounter, for not only is it valued for the resultant sport after being hooked, but it is also highly prized for the excellent mounted trophy it makes. Many of these fish adorn the home walls and club-rooms of anglers who take pride in their catches (Color Plate XII).

It was this fish which afforded the Chief Executive and members of his official family their sport last spring when

Photograph from Miami Aquarium

A 16-POUND MUTTON FISH BITTEN IN TWO BY A LARGER FISH

Landing half a fish is not a rare experience for sportsmen at Miami, Florida, for the hungry barracuda is sometimes quicker than the man with the line. The mutton fish was seized and contended for while being hauled into the boat.

in Miami waters. After his strenuous campaign and before assuming his manifold duties, President Harding matched his skill with much success against the huge game fishes of the Gulf Stream. Caught with light tackle, such gamesters require considerable skill in the landing, being very strong and of supreme courage. The tarpon and sailfish when hooked leap repeatedly many feet into the air in their efforts to free themselves from the hook and are very frequently successful in such ring generalship (see pp. 28, 29, 30).

The sailfish is not only a good sporting fish, but is also of considerable food value as well. This remarkably swift oceanic citizen is of unusual shape; its large, sail-like dorsal fin and its rapier-like spear make it a curiosity much sought after by the angler.

Little is definitely known of the use of the large dorsal fin, but it is not unusual to see it "hoisted" on the still waters of the tropics in the fish's surface dashes after prey. Its likeness to a boat's sail led inevitably to the fish being dubbed by its common name.

The marlin fish, which is a close relative of the sailfish and built very much on the same lines, has the sharp, protruding snout, but the dorsal fin is much smaller. It is purely a pelagic species. It is an excellent food-fish. The marlin is not so numerous as the sailfish, nor does it grow to be as large in Florida waters, but it is gamier, and, like most of the fighting fishes of southern localities, has a penchant for leaping clear of the water in its struggles for freedom (Color Plate XV).

THE DOLPHIN OF THE MARINER NOT THE FISH OF THE ANCIENTS

Of the game fishes the dolphin must be mentioned in the front rank. Much has been told of this wonderful species, and to the speed-loving American it is looked upon as one of the greatest of fishes, for there is probably no other citizen of the deep which travels so swiftly. It spends its entire life in the open seas. While idling, its movements are sluggish, but when in quest of its prey it moves with incredible rapidity, and to one observing its movements it appears like nothing so

much as a dash of color in the sea—a yellow-blue-whitish streak that is almost lost in the green water (Color Plate VIII).

Of all deep-water fishes, the dolphin possesses the greatest power to change its color. A dying dolphin affords a most beautiful and spectacular sight, when, with all the iridescence of an opal, it changes hue so rapidly that the brain cannot grasp the beauty of one color before another comes into view. In life its general color is a blue or emerald green above, with brighter blue dots showing on the base; the under parts are silvery and the caudal and pectoral fins are a clear yellow. It is an excellent food-fish, but, being not common in quantity, has little commercial value. It is caught usually only by chance, when one is fishing for other game fishes which inhabit the regions where the dolphin lives.

THE BONEFISH, A STEEL SPRING OF THE DEEP

The bonefish represents a single species, inhabiting all warm and tropical seas. It is considered to be among the most indefatigable fighters of fishdom, and is a source of much sport to the angler, who will often travel hundreds of miles for an opportunity to match his skill and wits with this fish. Its name is, like most common names of fishes, derived from its most striking feature, in this case an internal one. Its bony structure is similar to that of the herring.

In the localities where this fish abounds the natives have a way of stretching it before cooking, so that the bones may be released from the flesh. When cooked properly, after this operation, it provides a fine dish and the bones may be easily drawn out.

The color of the bonefish is a beautiful glistening silver and the scales are much desired by the natives of the West Indies. In fish-scale work for decorating ladies' costumes the scales of this fish are used. The writer has seen an evening gown made wholly of bonefish scales which was indeed a thing of beauty. The scales were bored and laid on a fabric base like shingles on a roof. The resultant effect was like that of the natural body of the fish (Color Plate IX).

Of all silvery-colored fishes, probably none equals the moonfish in beauty. These sluggish little fishes frequent shady places and sandy shores, where they are taken in seines in large quantities. To the quiet observer of their habits, they appear to be duly appreciative of the fact that they are admired, for they seem to be forever cleaning and preening themselves in the sands (Color Plate V).

The peculiar, moon-like contour of the bodies of these fish is mainly responsible for their name. They are literally the "high-brows" of the fish tribe, their high foreheads giving them what passes for the appearance of intellectuality. When seen at close range, the iridescence of their silvery bodies is more beautiful than mother-of-pearl, which the sides of the fish so closely resemble. They glisten in the sunlight like the sun flash from a mirror. As a food-fish they are equally as good as the pompano, which is high praise indeed.

Traits which mark land animals, with which man is more familiar than he is with the sea-dwellers, can be traced in the turbulent life under water. Killer-whales travel in packs like wolves and stalk their prey in much the same way. Other fishes, because of their appearance, have been given names to indicate a resemblance to land forms. There is the dogfish, the sea catfish, and the hogfish; but it is doubtful if ever a fish was given a more appropriate name than the nickname bestowed on the barracuda.

THE TIGER OF THE SEA

The barracuda is a carnivorous pirate from the tropical and subtropical regions and has been recorded as reaching a length of eight feet. It is amazingly swift in action, and strikes its prey without hesitation, on sight, darting with lightning rapidity at any moving thing in the sea, big or small, fast or slow. While cruising, its movements are slow and sluggish, and its habit of frequently hiding under some floating log or pinnacle of rock reminds one of a U-boat lurking in the ocean lanes, but ready to strike down the passerby (Color Plate I).

When taken with rod and reel, this fish proves to be a savage fighter. Its teeth are most sinister in appearance, having on each side a sharp, cutting edge, which, with the powerful leverage of its mighty jaws, make it a formidable foe. It will

MUTTON FISH (*Neomaenis analis*)

Living on rocky and grassy bottoms and feeding on small fish and crustaceans, the Mutton Fish is a food fish of great importance, and is taken at Key West in great quantities. It is the gamest fighter of the numerous Snapper family, and reaches a weight of twenty pounds or more. It is found from Pensacola to the West Indies, and south to Brazil.

RED GROUPER (*Epinephelus morio*) [upper]; NASSAU GROUPER (*Epinephelus striatus*) [lower]

The Red Grouper lives a solitary existence among the coral reefs except during the breeding season, when it becomes gregarious. It is a good food fish and reaches a weight of forty pounds. Thousands of pounds are annually brought into the Key West markets for local consumption and northern shipment. The species is found on the Atlantic Coast from Virginia south to Rio de Janeiro, and is common among the Florida Keys.

The Nassau Grouper is gregarious during the breeding season, when it is taken in great numbers. It reaches a weight of fifty pounds, and is caught with the hook readily, but is not particularly game. It has a remarkable power of changing its color. Its habitat is the West Indies, and from Miami to Brazil, being common in the vicinity of Bermuda.

BARRACUDA (*Sphyraena barracuda*)

Well deserving its name of "The Tiger of the Sea," the carnivorous Barracuda darts at its prey on sight and attacks fish many times its own size. Numerous instances are recorded of the Barracuda attacking human beings, and the natives of the West Indies fear it even more than they do the shark. It reaches a length of eight feet or more, and by many is considered a good food fish, although individual specimens are reported to be poisonous at certain seasons of the year It is found in tropical and subtropical waters, from Cape Cod south to Bahia and Bermuda, and is common among the Florida Keys.

GAG (*Mycteroperca microlepis*) [upper]; BLACK GROUPER (*Mycteroperca bonaci*) [lower]

Living among coral reefs, the Gag is one of the commonest of the Grouper or Rock Fish family. It is a good food fish, reaching a weight of twenty pounds or more. It takes the hook readily and is more game than the other species. It is found in the South Atlantic and on the Gulf coast of the United States, from Carolina to Pensacola and Bermuda, and is common among the Florida Keys.

The Black Grouper lives a solitary life among the coral reefs except in the breeding season, when it is gregarious. An excellent food fish, it reaches a weight of one hundred and fifty pounds or more. It is strong, but not a game fighter. It is abundant about Miami, among the Florida Keys, and is found throughout the West Indies, in Bermuda, and from Pensacola south to Brazil.

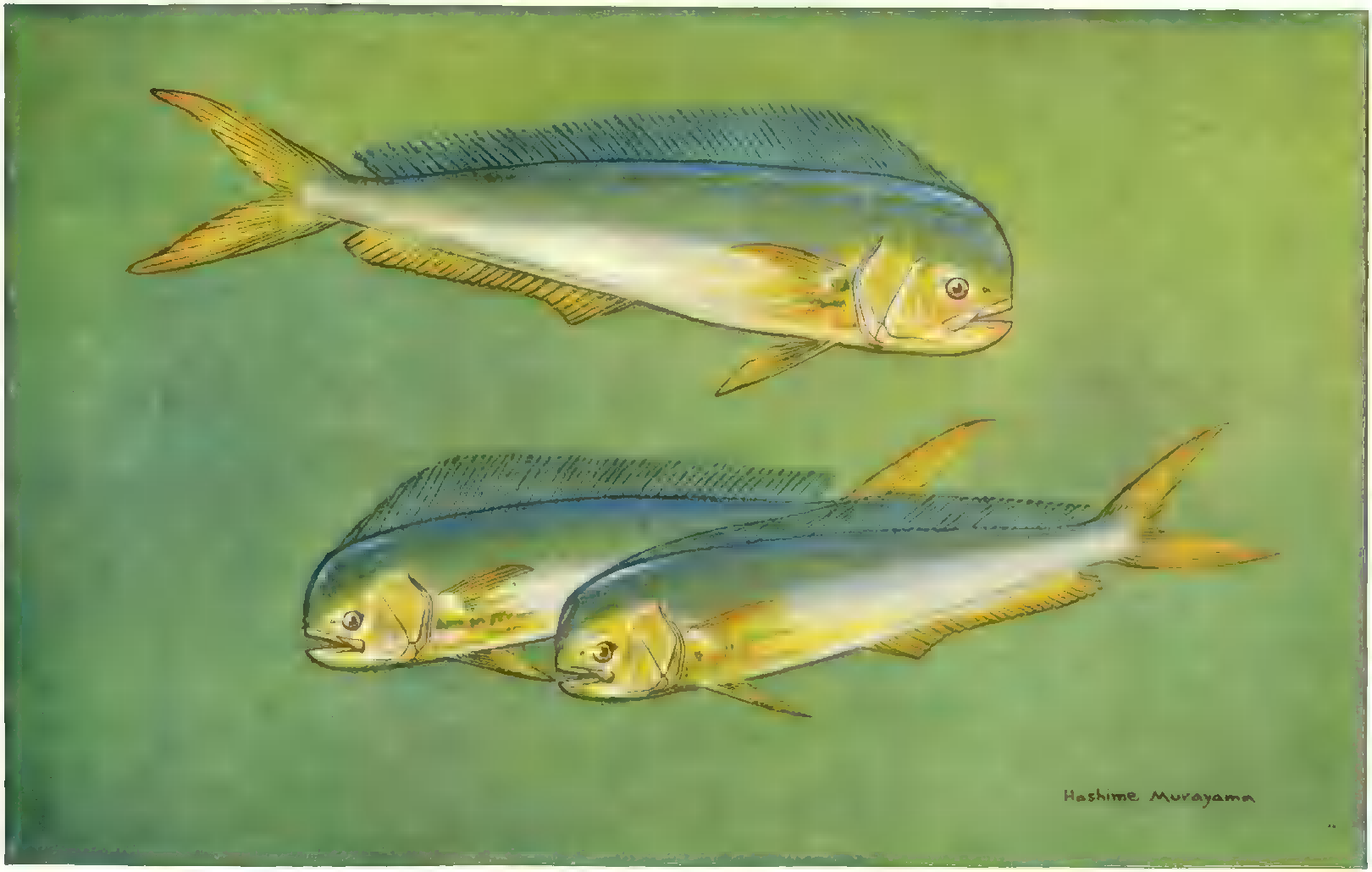
THE MARGATE FISH (*Haemulon album*)

The Margate Fish is a food fish of considerable importance in Florida markets, reaching a weight of ten pounds. It is the largest and gamest fighter of its family. It is found in the Bermudas, West Indies, Florida Keys, and south to Brazil, living on coral and grassy bottoms, and feeding on crustaceans, worms and mollusks.

SPANISH MACKEREL (*Scomberomorus maculatus*) [lower]; KINGFISH (*Scomberomorus cavalla*) [upper two]

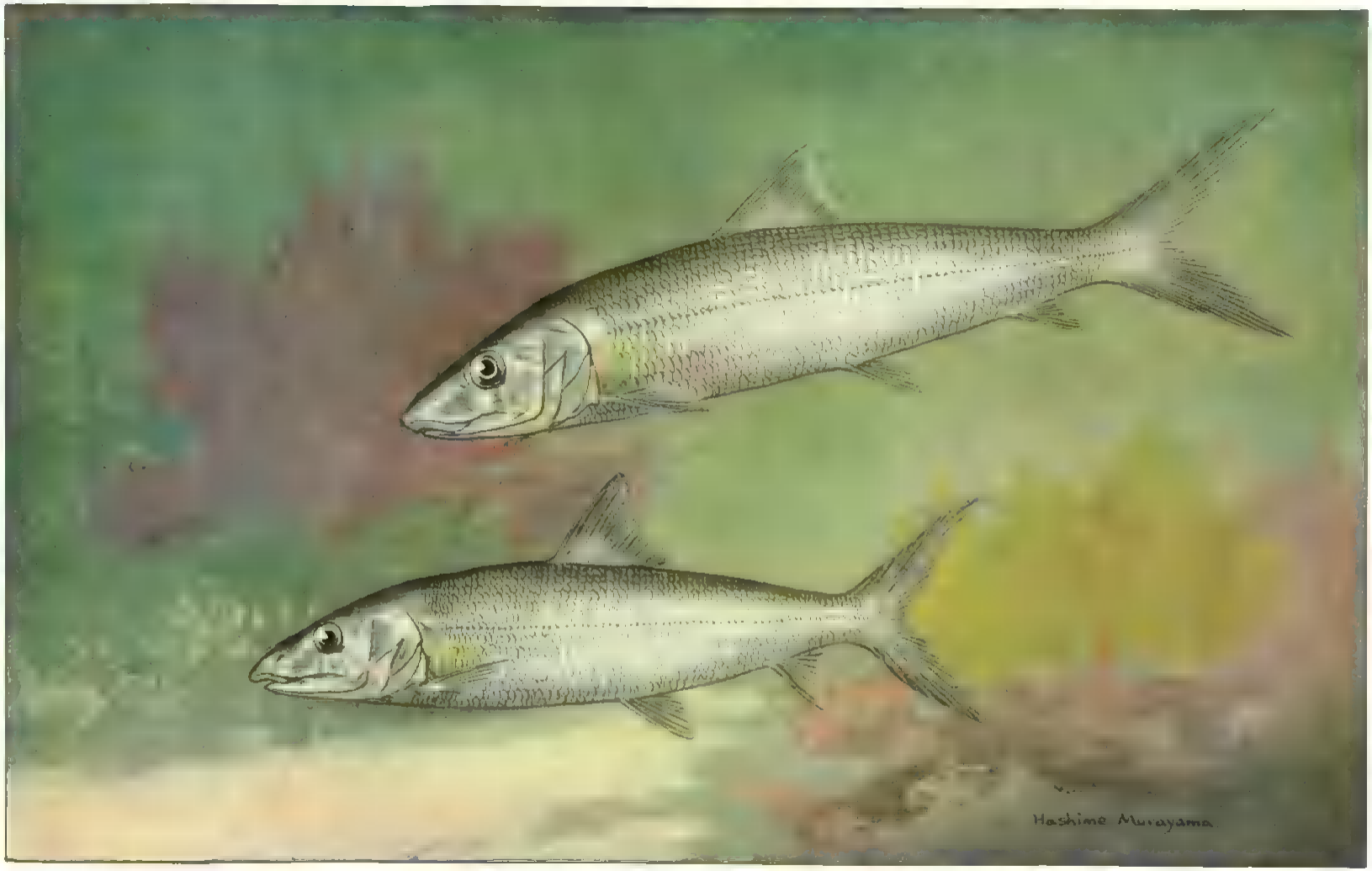
Living in warm seas and appearing in large schools in the Gulf of Mexico and on the Carolina coast, the Spanish Mackerel is one of the best, and perhaps the most popular, of American food fishes, averaging from four to five pounds, but reaching a weight of twelve pounds or more. It is found on both coasts of North America, and on the Atlantic seaboard from Cape Ann to Brazil.

The Kingfish, a game fighter on light tackle, is one of the principal food fishes of the Florida coast, attaining a length of five feet and a weight of one hundred pounds, with an average weight of from ten to fifteen pounds. The rows of yellow spots on the sides of the young disappear in the adult. The Kingfish is found in tropical Atlantic waters, the Gulf of Mexico, and the coast of Africa and Brazil, coming to the Florida Keys in vast numbers in the winter months.



THE DOLPHIN (*Coryphaena hippurus*)

Of all fishes, the Dolphin is probably the fastest swimmer. When pursuing its prey, which, in the open sea, consists principally of flying fish, it swims under the flying fish, and captures it at the moment when it touches the water. The Dolphin is an excellent food fish, very game when hooked. It reaches a length of six feet and a weight of seventy-five to one hundred pounds. It inhabits the high seas in warm regions, and is taken from Cape Cod to the West Indies. This is the Dolphin of the mariner, not the Dolphin of the ancients, which is a mammal.

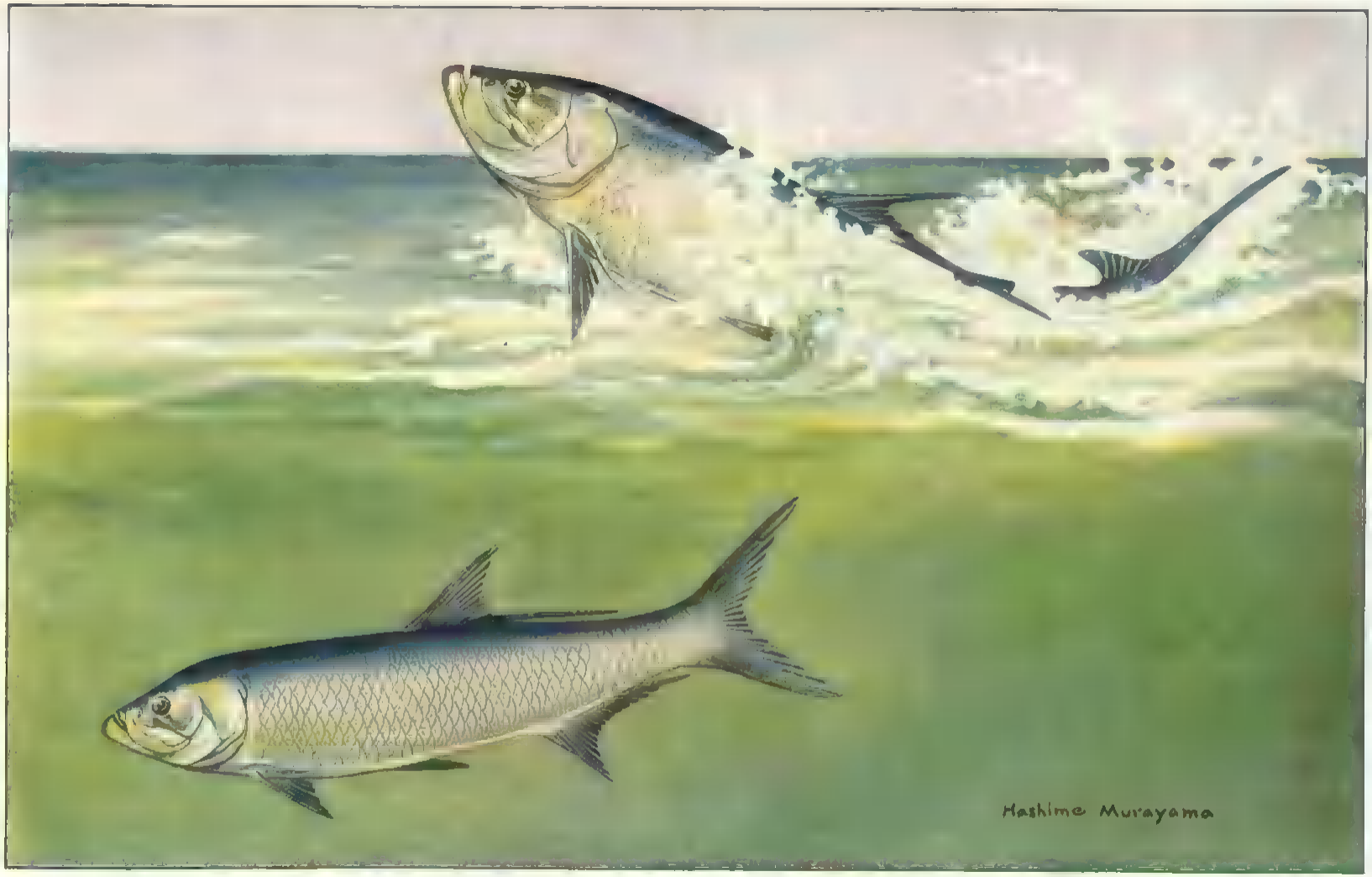


THE BONE-FISH (*Albula vulpes*)

This beautiful silvery species when removed from the water glistens in the sunlight like a mirror, and is considered one of the best fighters on light tackle, small Hermit crabs being used as bait. It is a food fish much esteemed in the West Indies, reaching a length of three feet. It is found in tropical seas, and is common in the Bahamas and the Florida Keys, living on sandy and muddy shores and feeding on crustaceans and worms

THE MOON FISH (*Selene vomer*)

This highly esteemed food fish, which reaches a length of a foot or more, lives on sandy shores and feeds on small fishes. It is taken in seines in large numbers about the Florida Keys. In appearance it is most beautiful, suggesting mother-of-pearl. It is found in tropical America on both the Atlantic and Pacific Coasts, from Cape Cod to Brazil, and from Lower California to Peru.

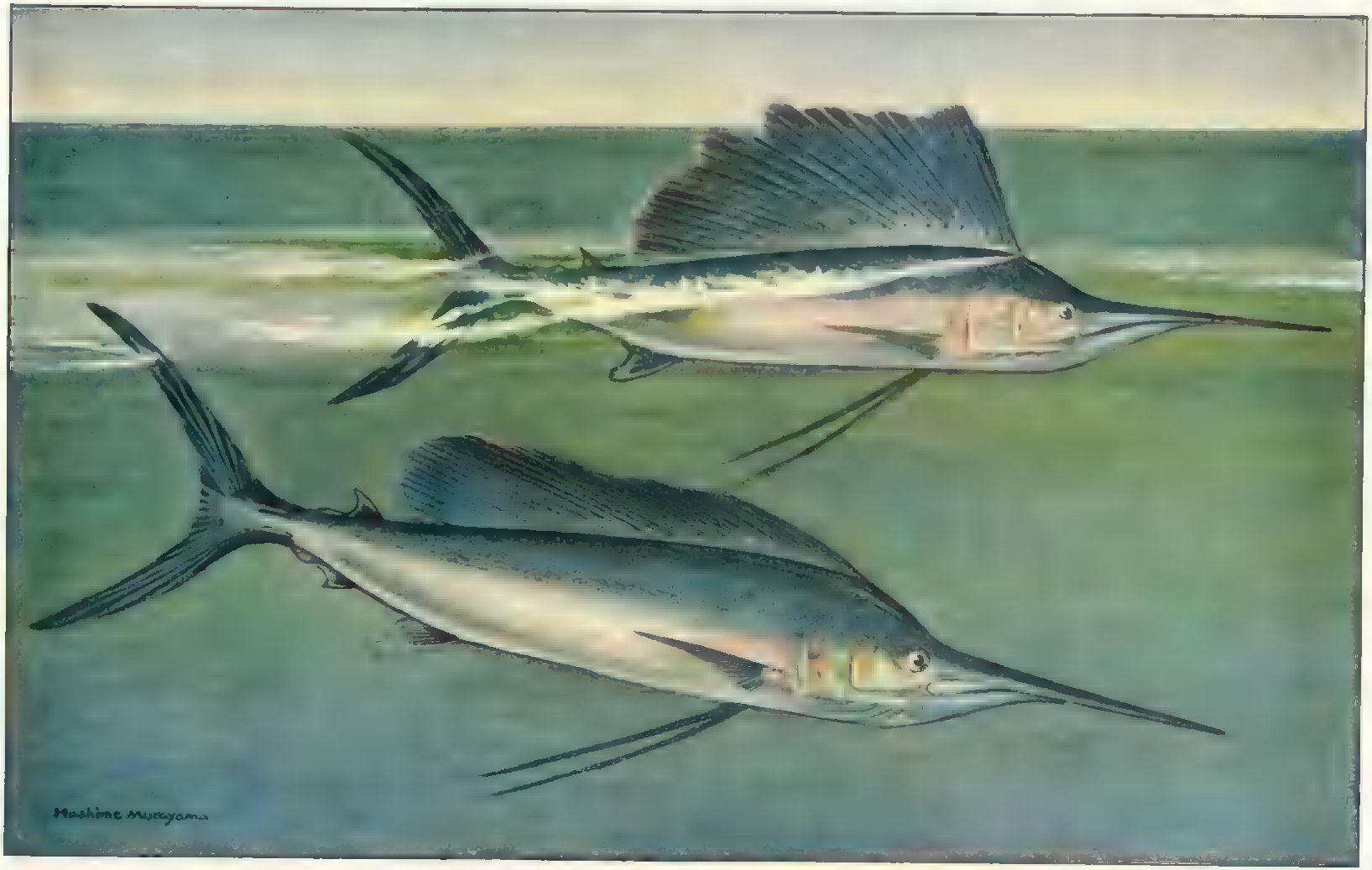


TARPON OR SILVER KING (*Tarpon atlanticus*)

To the salt water angler, the Tarpon is the most sought after of all game fishes. As it dashes about and leaps from the water, trying to shake itself free from the hook, its large scales glisten in the sunlight like molten silver. The Tarpon reaches a length of more than eight feet and a weight of two hundred pounds. It is not considered a good food fish, the flesh being dry and coarse. It lives among the Florida Keys, in bays about the entrance of rivers, sometimes entering the rivers for a considerable distance, and frequents brackish waters. Little is known of its breeding habits. It feeds on small fishes, mullet being considered the best bait, and is found from Long Island south to Brazil, in the West Indies, and on the east and west coasts of Florida, being common among the Florida Keys.

THE CRAWFISH OR SPINY LOBSTER (*Panulirus americans*)

A shell fish of great importance, the flesh of the Crawfish, which has a most delicate flavor, is highly esteemed as food, and is excellent bait, being taken by almost all Florida fish. It reaches a length of four feet but averages eighteen inches. The illustration shows the male and female. The female (on the left) has a small pinching claw on the last leg, which is used to comb the eggs and free them from foreign substances, as well as to remove the dead eggs. Thousands of pounds of Crawfish are marketed annually in Florida alone. It is found in the West Indies, the Bermudas, and the Florida Keys. It lives among the rocks in salt water, and feeds on mollusks.



SAILFISH (*Istiophorus nigricans*)

Much sought for by anglers, as its game qualities are second to none, the Sailfish is an excellent food fish and reaches a length of eight feet or more, and a weight of one hundred and fifty pounds. It inhabits warm seas, and is common in the Florida Straits.

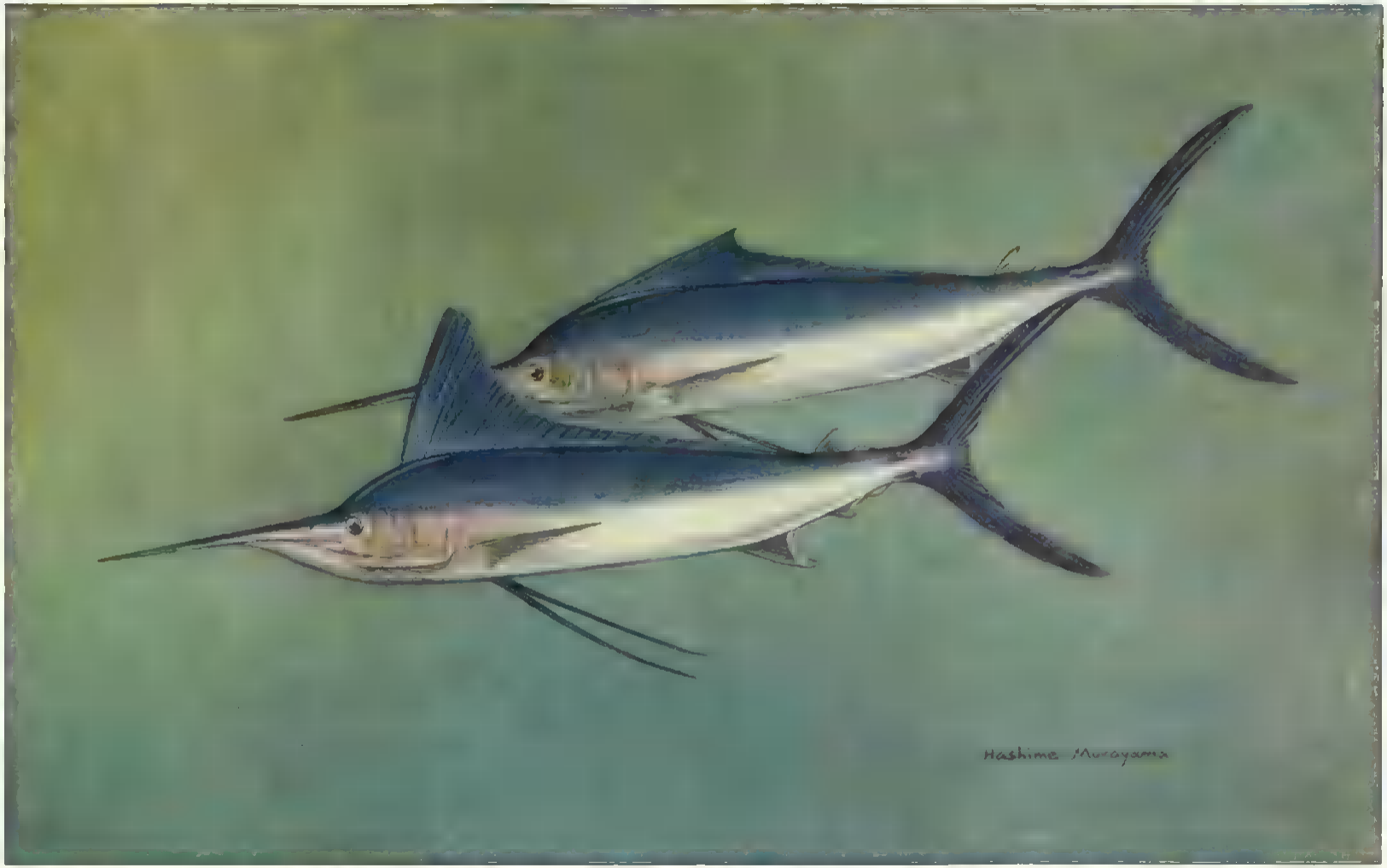
AMBER JACK (*Seriola lalandi*) [upper]; YELLOW JACK OR RUNNER (*Caranx ruber*) [lower]

Living near the surface of the water and often frequenting old wrecks and open waterways, the Amber Jack is common among the Florida Keys. It feeds on small fishes and mollusks, and takes the hook readily, being unexcelled as a fighter. It attains a length of five or six feet, and a weight of one hundred pounds or more, and is a good food fish. It is found off the coast of Florida, the Bermudas, and the West Indies, south to Brazil, and as far north as New Jersey.

The Yellow Jack lives in the open waters, bays, and inlets, and feeds on small fishes and mollusks. It is a game fish of rich flavor, and reaches a weight of ten or twelve pounds. The name *ruber* (red) is misapplied, as it never has this hue. It is found in the West Indies, Bermuda, and north to Woods Hole, being common among the Florida Keys.

ALLISON'S TUNA (*Thunnus allisoni*)

Little is known of this beautiful Tuna, specimens of which have been recently taken. It feeds on squid and flying fishes, and can be distinguished easily from the other species by its long dorsal and anal fins. Specimens weighing from 143 to 155 pounds have been taken. The species is named in honor of James A. Allison, President of the Miami Aquarium and Biological Laboratory. It is found on the east coast of Florida in the Gulf Stream.



MARLIN OR SPEARFISH (*Tetrapturus imperator*)

Not as frequent as the Sailfish on the Florida coast, the Marlin is easily distinguished from the former by its low dorsal fin. It is a very game fish and esteemed as food. It reaches a length of eight feet or more, and a weight of one hundred pounds. Its habitat is the West Indies, but it occasionally ranges as far north as Cape Cod.

GREEN TURTLE (*Chelonia mydas*) [upper]; HAWKSBILL TURTLE (*Eretmochelys imbricata*) [lower]

The Green Turtle is most highly prized as food, having no equal among the Sea Turtles. It reaches a weight of seven hundred pounds or more, but has an average weight of fifty pounds. It is herbivorous, feeding on marine plants, especially Turtle Grass (*Zostera marina*). It is found in the West Indies, off the coast of Florida, Bermuda, Ascension Island, Mosquito Coast, the Bahamas, and Brazil.

The Hawksbill Turtle furnishes the tortoise-shell of commerce, hence its high economic value. Great quantities of its shell come from the West Indies annually. The flesh is not so highly esteemed as that of the Green Turtle. It has an average weight of thirty to forty pounds, but two hundred pound specimens have been taken. It lives on fish, crustaceans, and mollusks, among coral reefs of Florida and Bermuda, the Gulf of Mexico, as far south as Brazil.

attack almost any kind of sea denizen, its own species included, no matter what the size, and with one snap it can sever the body of an unbelievably large fish. This has been demonstrated often to fishermen, who have had their catch taken by the barracuda before it could be hauled into the boat (see page 35).

Natives of tropical waters fear the barracuda more than the shark, and with good cause, as is attested by the injuries this fierce fish has inflicted on the bodies of individuals who have been so unfortunate as to be struck by its wicked jaws.

Yet this ferocious creature, like practically all fishes kept in captivity, becomes docile when properly cared for. At the Miami Aquarium, so admirably located at Miami Beach, Florida,* one of the aquarists, when superintending the cleaning of the tanks, will pet the barracuda much as a child strokes the back of a pet cat, and the fish will, in a seemingly gentle way, take food from his hand.

Although in some sections the barracuda is said to be poisonous during certain seasons of the year, in reality it is a good food-fish. The writer investigated reports that the fish is poisonous, and in the sections where the belief was prevalent could find no reason for it, other than that the flesh had probably been kept until it became tainted and ptomaine poisoning was the result. A number of barracuda were caught, cooked, and eaten in order to demonstrate to the natives that the fish, if properly kept and prepared, is a wholesome fish at all seasons. As a result, in many places the minds of the natives have been disabused in regard to the edibility of the barracuda.

This misconception in regard to the barracuda is typical. Those who handle fish daily, even the old-time fisherman who can at any time lead one directly to the habitat of those fishes peculiar to the waters in which he operates, does not fully understand the food values of the creatures with which he deals. To realize this it is only necessary to investigate, even casually, the fish markets along the southern Florida coast; their counterparts in the Bahama Islands directly opposite and divided by but a few miles of water; and those of the West Indies, to the southeastward and almost as close. In these three localities, their shores laved by the same stream, in practically the same climate, the food-fishes chosen in the market are in many cases so unlike as to lead one to believe that altogether different ranges of sea life exist in the three sections.

* See "The Treasure House of the Gulf Stream," by John Oliver La Gorce, in the NATIONAL GEOGRAPHIC MAGAZINE for January, 1921.

FOOD VALUE OF WARM-SEA FISH

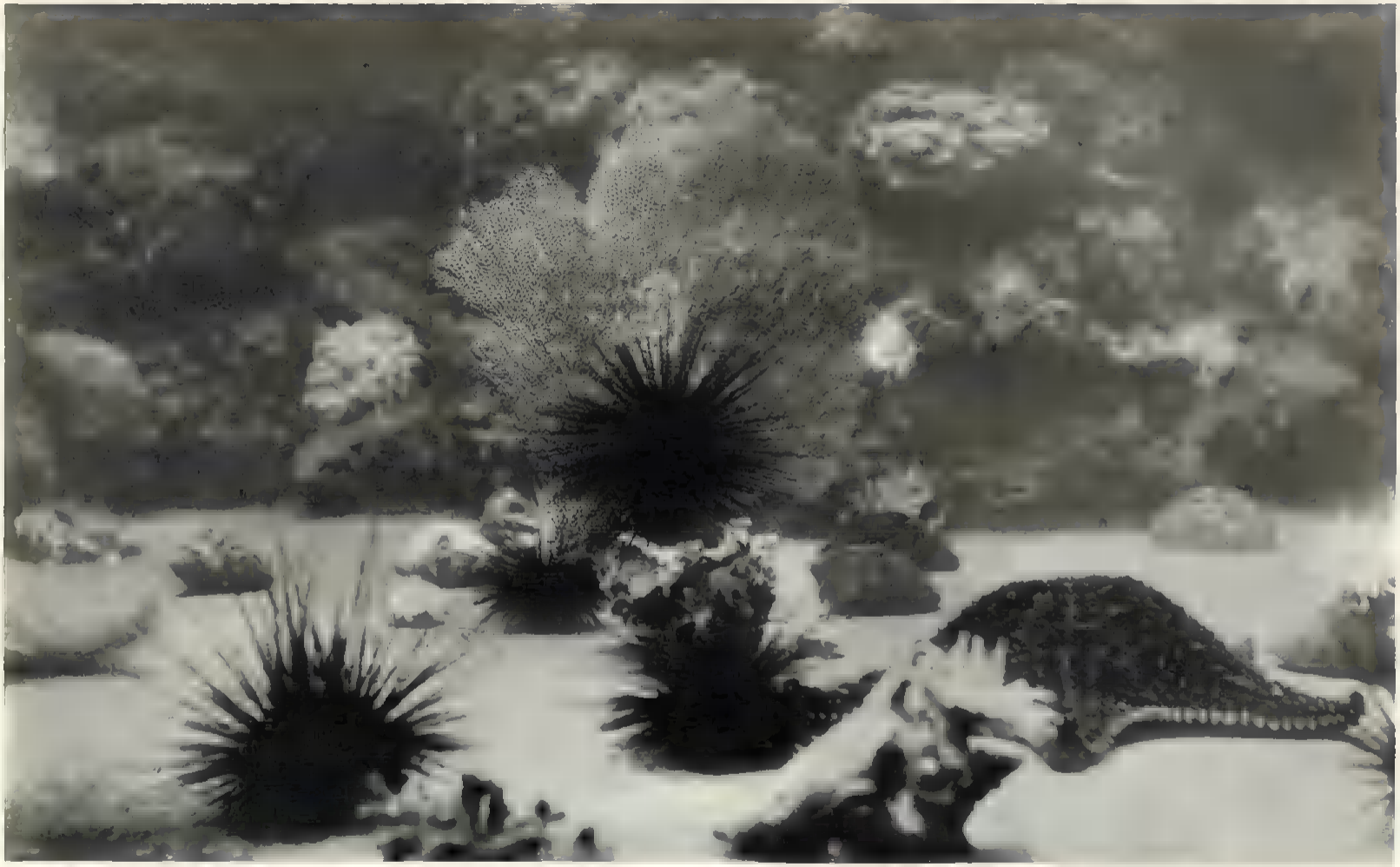
In the Florida markets the several members of the grouper family are highly considered and find a ready market, while in Bermuda these fishes are not looked upon with favor. The groupers represent one of the largest families of fishes in tropical and subtropical waters. Some of the species reach a length of eight to ten feet and weigh, at times, as much as 600 pounds.

The black grouper, which grows to be one of the largest of the family, is extremely wary and is one of the most difficult of fishes to land. When one is still-fishing, this species will sometimes encircle the bait for hours before deciding to take it.

One would imagine that the fish looks its surroundings over very carefully before venturing to take the bait; but, when apparently satisfied that it should take it, the black grouper bites at it most viciously and forthwith makes for the nearest hole in the coral reef, and thus it often frees itself by running the line over a sharp edge of the reef. Once the hooked fish reaches a hole, it is almost impossible to bring it again to the surface. Trolling is by far the best way to take the black grouper (Color Plate IV).

The Nassau grouper is another large member of the family. It, like the other groupers, inhabits the coral reefs and lives a solitary life, except during the breeding season, when it is gregarious. During this period it congregates in large shoals, from which habit the family receives its name. The Nassau species changes color with great facility, but during the change a black spot at the base of the tail retains its deep color, no matter what other tints may come and go all over its body (Color Plate III).

The red grouper is not, on the average, as large as its Nassau cousin, forty



Photograph from Miami Aquarium

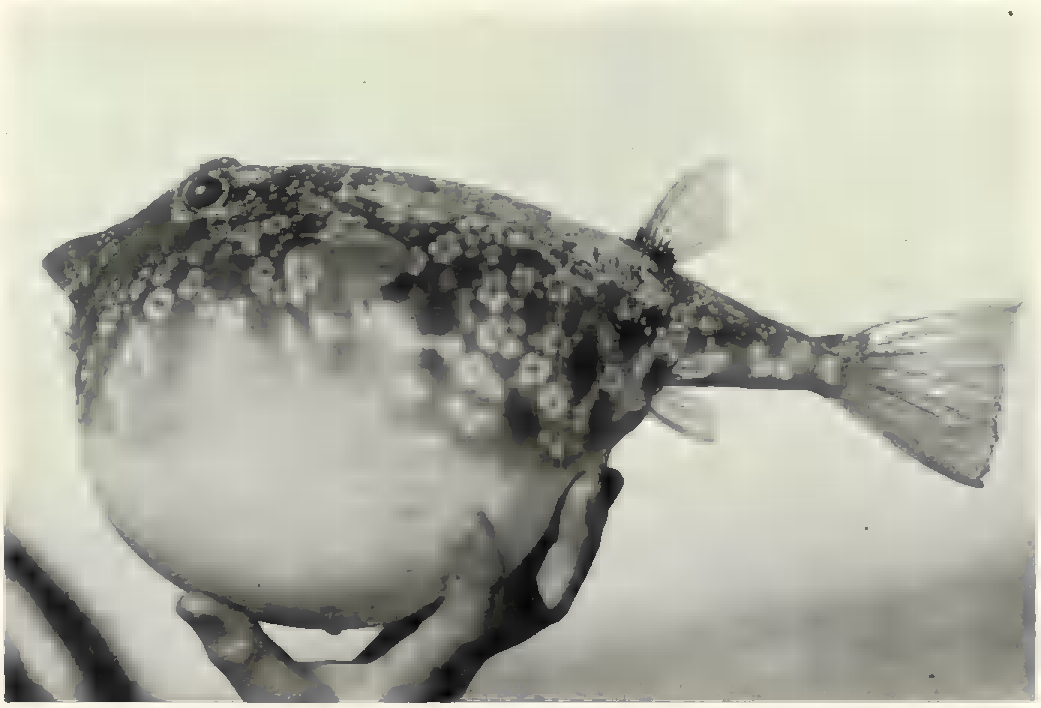
CURIOSITIES OF THE OCEAN FLOOR

Not white chrysanthemums but giant anemones very much alive and constantly moving their long petals in search of minute particles of food. The clusters of black hatpins are living sea-urchins so protected by their movable quills that few marine animals disturb them. The hermit crab walks about with his borrowed home, an empty conch shell, and the star-fish is much in evidence. The beautifully tinted sea-fan forming a background for a long-spined sea-urchin is thriving in a cluster of coral.

Photograph from Miami Aquarium

BARNACLES ON THE KEEL OF A SHIP IN DRYDOCK

The barnacle (*Balanus*), sometimes called the acorn barnacle, is of the crab family, a crustacean which secretes its own lime for its outer covering. Its minute spores when thrown off attach themselves as quickly as possible to some object—a ship's bottom or piling—growing rapidly and attaching one upon another until a stag horn is formed, reaching five or more inches in length. Investigation has determined that dead barnacles are common carriers of many small fishes, the shell cavity being from two and a half to three inches deep and from three-fourths to one inch in diameter, thus affording a secure touring cabin. So it is that small fish of the Pacific are no doubt transported around the Horn into the Atlantic and to other oceans in the same way. This crustacean causes an annual loss of many millions through the fouling of ships' bottoms and retarding the speed of the world's ocean-going commerce.



Photograph by L. F. Williamz

SWELL (PUFFER) FISH FOUND IN FLORIDA WATERS AND ALL WARM SEAS

To frighten its enemies, this fish is permitted by a considerate Nature to fill itself with air when approached. Sometimes it puffs too much and bursts.

pounds being a high weight for this species. It is a good food-fish and is beautiful in appearance. It has habits similar to the other groupers (Color Plate III).

The gag, a smaller-scale grouper, is not only esteemed as a food-fish wherever it may be found, but is also one of the gamiest of the family. It seldom attains a greater length than four feet. Its habitat is principally along the Florida reefs; it also frequents the Bermudas (Plate IV).

The gamiest of the grunts, the margate fish, is another excellent food-fish, likewise the mutton-fish, of the snapper family, which is considered the best fighter of that clan and also the largest. Some mutton-fish reach a weight of as much as 25 pounds (Color Plates II and VI).

THE MAJESTIC MACKEREL AND HIS KINGLY COUSIN

Some of the species mentioned are popular only locally, but the Spanish mackerel is known favorably not only in its own habitat, but wherever shipping facilities are such as to provide for the transportation of this sound, finely flavored fish. Millions of pounds are shipped north annually from the State of Florida alone. From one market, Key West, more than 3,000,000 pounds are shipped each year. They are surface-living fish of great game qualities, elegant in form and color, and among the swiftest fishes of the sea, as their stream-like line and tail indicate. They appear in countless numbers in southern waters from November to March, during which period they are taken in great quantities for the market (Color Plate VII).

Associated with the Spanish mackerel is the kingfish, which is somewhat larger, on the average. Both belong to the same family and are much alike in many respects. As a food-fish, the kingfish ranks next to the Spanish mackerel, and nearly a million pounds are shipped each year from the Key West markets (Plate VII).

THE NUMEROUS JACK FAMILY

Most of the fishes referred to are carnivorous and are not frequently seen in the neighboring waters of populated sections. It is by no means a rarity, how-

Photograph by James A. Allison

FEMALE SAWFISH TAKEN ALIVE IN A NET AND EXHIBITED FOR SEVERAL WEEKS IN A 36-FOOT TANK AT THE MIAMI AQUARIUM

She gave birth to nine young, the only record of sawfish being born in captivity.

ever, for even the most wary—excepting, perhaps, the dolphin—to frequent the haunts of man.

While wariness is a common trait of game fish, one species, the jacks, seems to have no fear of man and his traffic. They may often be observed resting lazily, in tidal waters, under a bridge or near the shore, where the traffic is constant. They cruise slowly around, awaiting the approach of their favorite food, the mullet. When a school of mullets appears in sight, there is instant action. The jacks marshal their forces and bear down upon their prey, upon which they wreak spectacular and terrible carnage.

The amber jack is the largest and gamiest of its family and inhabits both the shoal and deep waters among the Florida Keys, the West Indies, and Bermuda. It provides excellent sport for trolling and will take almost any kind of live bait offered by still-fishing. It is a carnivorous, surface-living fish of considerable food value in the Bermudas and the West Indies, where large numbers are taken for market purposes. It is not so highly considered in the Florida markets, where its cousin, the yellow jack, is more common (Color Plate XIII).

The yellow jack is also a surface-living fish of graceful lines and beautiful coloration. It resembles the amber jack closely, both in habits and appearance, although it does not reach so large a size.

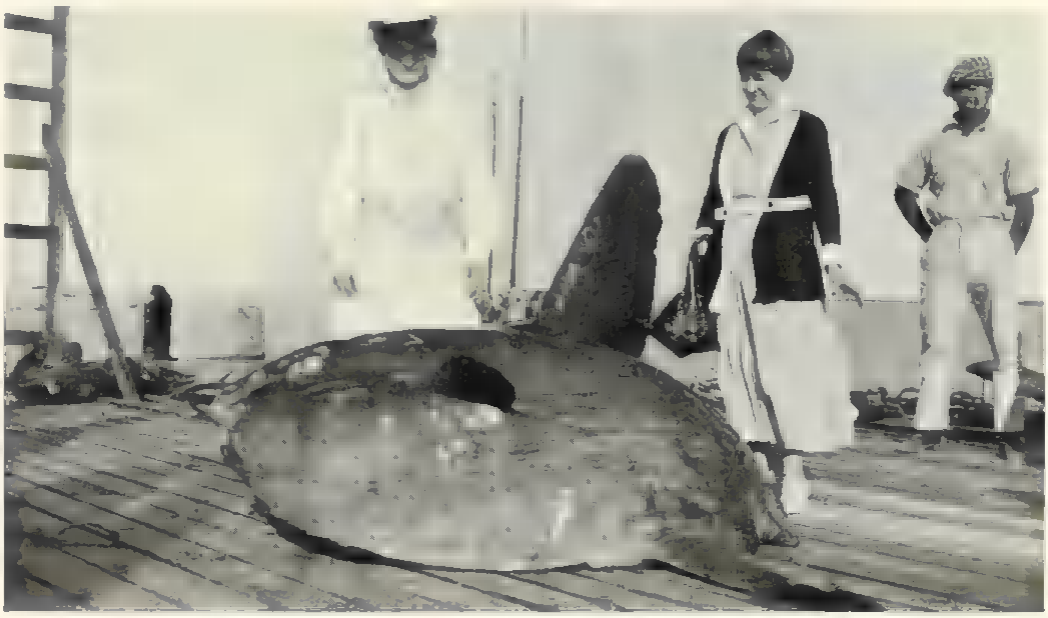
CONTRIBUTING TO THE WORLD'S KNOWLEDGE OF KNOWN FISH

The fishes already mentioned are common in the waters adjacent to the Gulf Stream and are widely known, many miles from their habitat, for their gameness and sporting qualities or for their food values; but now and then a new Gulf Stream species has been found which requires classification.

Such a find was made in the case of Allison's tuna. This beautiful fish, of which but a few specimens have been caught, was taken at the edge of the Gulf Stream, off Miami Beach, Florida. It is proved to be a new species added to the American fauna—a species second to none of the other members of the family

Photograph by Dr. W. H. Longley

THE GRAY SNAPPER (NEOMENIS GRISEUS) AMONG GORGONIANS



Photograph by Herbert R. Duckwall

AN OCEAN SUN-FISH, WEIGHT 1,500 POUNDS, CAUGHT IN THE GULF STREAM OPPOSITE MIAMI, FLORIDA

Photograph by Herbert R. Duckwall

A KILLER WHALE IN ACTION

This scourge of the oceans is feared by all living fish, from the mackerel to the sperm whale. Traveling in packs, the killers are known as the wolves of the sea.

in coloration and interest. It reaches a large size and will in all probability become one of the most-sought-for fishes by anglers in the Florida waters. The newness of the fish will doubtless cause sportsmen to vie with one another in their efforts to land a specimen of record size. The new tunas appear to be most numerous in January (Color Plate XIV).

The writer has good cause to believe the reason this fish has not been taken until recently is because the tackle used for the sailfish and other fishes common in the waters harboring this tuna was too light to stand the strain put upon it when this powerful fish struck. Many lines and rods have been broken by large fishes in this section, and sharks have been blamed, when unquestionably, in a great many cases, it was the newly discovered tuna.

The *Thunnus allisoni* is, like the others of the genus, a warm-blooded fish and its flesh is of fine quality and flavor.

Reptiles as well as fish have found the Gulf Stream a kindly habitat; but turtles, probably the most valuable of reptiles, are diminishing rapidly in many of the localities bathed by this great stream of warm water where they were formerly abundant. During the period of slavery it is said that many negroes were prompted to try to escape, in some sections of the South, because they were compelled to subsist mainly on a diet of terrapin. Now terrapin is a much-sought-for delicacy, difficult to obtain. And what is true of the terrapin is also true of practically all other turtles.

Without doubt, the green turtle is the finest-flavored of the sea turtles and the most highly esteemed as food. It is an herbivorous feeder, inhabiting the open seas in the West Indies, the Bahamas, Brazil, the Gulf of Mexico, the Pacific Ocean, and the Straits of Florida, although it is now almost extinct in Florida waters. The greatest numbers are taken off the Mosquito Coast of Central America (Color Plate XVI).

The green turtle is a beautiful species, reaching a weight of more than 700 pounds, but averaging considerably less. In captivity it becomes quite tame and

AIR VIEW OF THE MIAMI AQUARIUM BUILDINGS, MIAMI BEACH, FLORIDA, OPENED TO THE PUBLIC JANUARY, 1921

thrives on turtle-grass, lettuce, and purslane, or "pusley." It will eat flesh, but lives much better on vegetable foods.

There is danger that these turtles will be wiped out of existence. They are far less numerous than in past seasons, due to the natives digging the eggs. The female turtle visits the beaches from April until June to deposit her eggs. This she does by digging a hole to a depth of from 14 to 18 inches in the sand, where she lays from a single egg to 200. On the fourteenth night from the first deposit—on what is known as the second crawl—she returns to lay more eggs close by her first nest.

Not only do the natives of the islands where the turtles crawl rob the nests, but they frequently catch the turtle after she has deposited her eggs, thus wiping out at one stroke both the mother and all her potential progeny.

BIRDS ARE ENEMIES OF THE GREEN TURTLE

Although statutes covering the protection of the turtles are written into the laws where these reptiles were formerly plentiful, the marauders continue their work of despoilation. Yet even now between 1,500 and 2,000 green turtles are brought annually to the Key West markets, the average weight being 130 pounds.

Man, although the greatest, is only one of the enemies of the turtle. When the young are hatched, they dig to the surface of the sand and immediately make toward the sea. Their instinct in locating the proper direction is unerring, and freshly hatched turtles, flipped like a coin and turned away from the sea, will wheel around and make directly for the salt water. The pelican and man-o'-war bird swallow the young as soon as they observe the small creatures on their way to the water, and if they reach the water they are harassed by their fellow sea-dwellers.

The hawks-bill, or shell turtle, is without question the most beautiful of sea turtles. It is the producer of the much-valued tortoise shell of commerce. This species is found in considerable numbers in the West Indies, where its members deposit their eggs from May to July. It is also distributed throughout the Gulf of Mexico, south to Brazil and the Straits of Florida, although it is now rare in the last-named section to an even greater extent than the green turtle. Large

quantities of the valuable shell are shipped every year, principally to Europe. The flesh is not as highly esteemed as that of the green turtle, but it is eaten in some localities (Color Plate XVI).

While the shell turtles are taken principally in large nets, into which they are driven, the natives of the West Indies have another method of catching them, known as "bullying." They drop over a sleeping turtle the "bully," an iron hoop four feet in diameter covered with a net like the crown of a hat. The turtle becomes entangled in the meshes and is then easily brought to the surface.

When alarmed, the turtle will hide its head, much as the ostrich is said to do, and then considers itself quite safe from observation. At the Miami Aquarium one of the turtle specimens has found a conveniently located hole in the rocks of its tank, and spends most of the time with its head thrust in the opening, its body dangling outside. Scores of times during the past season visitors have rushed to the office of the director to inform him that one of his prize specimens had gotten caught in a crevice and was strangling to death.

THE CRAWFISH, PRIZED COUSIN OF THE NORTHERN LOBSTER

Crustaceans play no mean part in the life of the sea. They cover a wide range in size, from the most minute of creatures to the great Japanese crab of the western Pacific, whose claws have a spread of 15 or 16 feet. High in the rank of the American crustaceans stands the crawfish, or spiny lobster (*Panulirus americanus*), of southern salt waters. It grows as large and is of even a more delicate flavor than its northern cousin. This species should not be confounded with the fresh-water crawfish, which is an entirely different form.

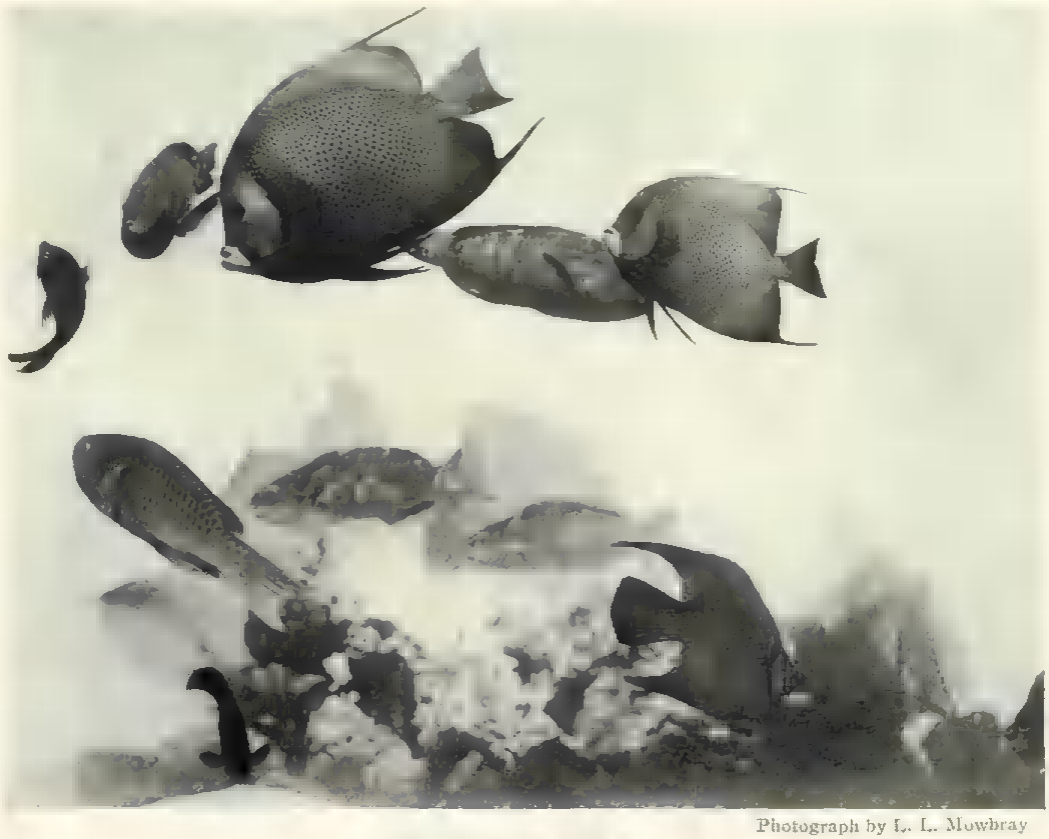
The *Panulirus americanus*, or southern lobster, is the largest of the crustaceans known to inhabit the Atlantic, the Mediterranean and Caribbean seas and is generally conceded to be the most toothsome. Reaching at times the extreme length of four feet, the crawfish provides an abundance of food material. Large numbers are shipped every year from the Florida markets. It dwells among the coral reefs and heads and is usually caught

CATCHING HIS BREAKFAST ON THE FLY

in traps baited with small fish, although "bullying" and spearing are also used to some extent (Color Plate XI).

The crawfish is not only a delicacy from the standpoint of human consumption, but is relished, too, by the inhabitants of the sea and is an excellent bait for most fish in the Florida waters. In the Miami Aquarium it is the staple food for nearly all kinds of fishes. Even the most purely herbivorous fishes eat, and appear to relish, the fine white flesh of the crawfish.

Crawfish are easily kept in an aquarium and make an interesting exhibit. This is true particularly of the female during the spawning season, when she is busy, almost constantly, combing her eggs in her efforts to give her prospective progeny a



Photograph by L. L. Mowbray

PEACOCKS OF THE SEA

Nature's paint brush has been lavish in tinting many of the warm sea fish. Here are seen in what approximates their natural habitat, alive and contented, the Black Angel, Blue Angel, Rainbow Parrot, and Blue Parrot, fish of fantastic shape and beautiful color.

fair start in the arduous life into which they are about to enter. The figure on the left, Plate XI, shows a specimen carrying her eggs. On the last leg may be noted a pincer, which is used in removing the dead eggs and debris which may adhere to the egg clusters. Large numbers of the eggs have been hatched and scientifically observed at the Miami Aquarium with a view to increasing this valuable food supply.

At the Aquarium many laboratory tests are made of the structure and composition of marine forms peculiar to local waters. Every stage in the life of fish is studied. Some interesting discoveries have been made, and others will undoubtedly follow, whereby man will benefit. More and more are the peoples of the earth looking to the sea for sustenance and even for leather substitutes and various other products. Science has helped much in garnering the sea's valuable materials for the use of the land's dominant animal.

Whether looked upon merely as potential food in a world in which food is becoming relatively scarcer; as interesting or beautiful creatures worthy of study and admiration, or as furnishing the material for a thrilling sport, the fish of the southern Gulf Stream are receiving more and more attention, from the all-too-small group of distinguished ichthyologists who specialize in this investigation.

Ages before Izaak Walton wrote of the fascination of catching fish only large enough to bob a tiny cork, the lure exerted by the finny tribe for sport-loving men had been conceded. When the hooking of small fresh-water creatures can bring its joys, is it any wonder that humble citizen and President alike grow enthusiastic over battles royal with rod and reel in which they match their skill with the great creatures of the Gulf Stream.

THE LAND OF THE BASQUES

Home of a Thrifty, Picturesque People, Who Take Pride in the Sobriquet, "The Yankees of Spain"

By Harry A. McBride

SPANISH trains, except on the few important direct routes, have little ways and mannerisms all their own. My first experience was on the *correo* from Barcelona to Bilbao, an express scheduled to leave at five in the morning and to arrive at eight in the morning of the following day; also an express that carried no sleeping-car.

The journey was scarcely begun when it became evident that the ordinary railway means of transportation on the Peninsula offered an excellent opportunity to sit and think and to smoke cigarettes. In America we have one car where smoking is indulged in, but in Spain there is only one car set aside where "to smoke is prohibited," and that car is as often as not empty.

This express made slightly more than fifteen miles an hour, and halted at innumerable stations where the neat little brick station-houses, almost exactly alike in construction, were the only signs of human habitation. I suppose there must have been a little town or village not more than one, or two, or three miles away; but Spanish railways are expert in the matter of successfully dodging the towns and stopping in a field at a very safe distance, the *locomotoras*, as it were, having not yet become city-broken.

At each stop there was plenty of time to get out, light a fresh cigarette, and take quite a promenade, while the engineer renewed his acquaintance with the hangers-on at the station and gave them all the latest Barcelona gossip.

THE LEISURELINESS OF SPANISH TRAINS DEMONSTRATED

A picturesque touch at many stations was the pair of *Guardias Civiles* standing stolidly by, carbines at their side, gravely overlooking the throng, in their Napoleonesque uniforms — triangular hat of polished black leather, gray tunic, with "Sam Brown" of white, a wide yellow belt, and gray trousers. This anti-bandit rural police is one of the most efficient and laudable institutions of Spain.

After something like two dozen of these stations had been safely negotiated and the stops becoming longer and longer in duration, it became evident that we were dropping considerably behind our schedule. I asked a fellow-traveler if we were likely to make up the lost time. The question seemed to daze him; then he said:

"Pues no, hombre, claro que no; pero que importa eso." Quite so; inconceivable that there could be any importance attached to such a small matter.

At last we had managed to become six hours behind time, and then the engineer evidently became thoroughly discouraged, for it was announced that we should arrive at Saragossa at about 19 o'clock; that this train would be taken off there, and that the passengers could proceed by the first train on the following day if they felt so disposed.

THE BASQUE PROVINCES RESEMBLE ANOTHER WORLD

The next day we ran out of Aragon and Navarre into another world, the Basque provinces—more hilly, more industrious, more modern—the New England of Spain. Even the train picked up spirit and arrived at each succeeding little station punctually, according to the unfailing station clock.

In the real Spanish provinces the peasants met on the highway never fail to greet the traveler with the salutation:

"Vaya Ud. con Dios."

This is a century-old request to God to be with you on your way. In the Basque provinces, however, it is changed to a brisk "Buenos"; they are so modern that they even abbreviate "good-day," and say only the first half of it.

The "Vascongados," as the Spaniards call them, or the "Euskaldunac," as they

SUBURBS OF BILBAO, ON THE WINDING RIVER NERVION

Even before the Nervion, on its way to the Bay of Biscay, reaches Bilbao, it has formed the habit of making graceful S's—winding in and out among the beautiful hills and mountains of Vizcaya.

Photographs by Casa Lux

VIEW OF THE NERVION RIVER AT SESTAO

The town of Sestao marks the last of the suburbs which make Bilbao the "Pittsburgh of Spain," with its iron mines, blast furnaces, and ore-loading steamers. The Nervion River then takes one more turn toward Portugalete, and the Bay of Biscay comes into view—out of the smoke and roar of industry into the sunshine of Spain again.

Photograph by Casa Lux

LOOKING DOWN INTO THE CENTER OF BASQUEDOM, THE CITY OF BILBAO, FROM THE CIRCLE OF MOUNTAINS WHICH SURROUNDS IT

Scattered here and there over all Basque landscapes are the small farms and neatly kept houses of the thrifty peasants. A delightful walk, though a somewhat tiring one, is from the city up to the Church of Begoña, in the right background—tiring because of the fact that much of the way is up short flights of steps.

Drawn by James M. Darley

A SKETCH MAP OF SPAIN AND THE BASQUE PROVINCES

In three small provinces of northern Spain—Guipúzcoa, Vizcaya, and Álava—live the Basques, who proudly claim to be the oldest unmixed race in Europe (see also "The Races of Europe," in the NATIONAL GEOGRAPHIC MAGAZINE for December, 1918). Across the Spanish border is a French contingent of this race, whose most distinguished scion is Marshal Foch.

call themselves, are decidedly different. Even the Basque tongue (Euskara) is totally unintelligible to the Spaniard, and it is spoken almost exclusively by the peasants of the three little provinces of Guipúzcoa, Vizcaya, and Álava, though Spanish is used in the larger towns and cities. A Basque newspaper, and there are several of them, resembles Polish quite as much as it does Spanish.

"THE OLDEST UNMIXED RACE IN EUROPE"

The history of these "Yankees" of Spain, who proudly claim to be the oldest unmixed race in Europe, is a repetition of determined efforts to defend and retain the natural rights and liberties which they have enjoyed since time immemorial. They had certain *fueros*, or special privileges, to which they held through thick and thin, and way back in 1202 they stubbornly refused to become incorporated with the provinces of Leon, Navarre, and Castile until the privileges had been duly recognized and acknowledged.

These privileges gave the Basques, among other things, a republican constitution in their three little provinces, immunity from taxation and freedom from national military service, though they maintained certain forces of their own.

But the Vascongados, wearing the

Photograph by Casa Lux

A PANORAMA OF BILBAO FROM MONTE CABRAS

Looking down from highly cultivated fields to the Nervion River, with its iron foundries and shipbuilding yards. The Basques are not only progressive manufacturers, but also industrious and efficient agriculturists.

white cap of Don Carlos, took part in the "lost cause," and at the conclusion of the second Carlist War, in 1876, Alfonso XII, triumphant with victory, immediately attended to the matter of the *fueros* of the Basques, abrogating most of them in a peremptory manner. Thus the much-hated salt monopoly of the Spanish Government was introduced into the three provinces along with the more-hated tobacco monopoly and with the most-hated "quinta," or military conscription.

The provincial governments still retain, however, a semblance of their ancient independence. At the village of Guernica, a charming little place some nine miles from Bilbao, there is still pointed out, with great pride, the spot where stood the "Guernikako Arbola," the tree of Guernica, in a little plaza in front of the Casa de Juntas. It was under this oak tree that the Basque deputies met every two years before the abolition of their *fueros*.

There also remains a small remnant of the old military forces of the provinces—soldiers in blue blouses, red trousers, and soft red caps—who are now employed as customs and coast guards and in assisting the Guardia Civil as rural police. They are called *miñones*.

BILBAO, THE PITTSBURGH OF SPAIN

Picture a small, round valley nestling among wondrous green hills, some of which are almost worthy of the name of mountains, with a river carefully making a letter S or two in order to enter this beautiful stronghold. That is the site of Bilbao, with its hundred thousand souls, the largest Basque city and the second seaport of Spain.

The river is the Nervion, which has been canalized from the city to the Bay of Biscay, eight miles distant, so that seagoing merchant vessels come to town, passing the Ayuntamiento, the beautiful municipal building, on their way, and dropping anchor within a stone's throw of the Teatro Arriga, one of the finest theaters in Spain.

The hills encircle the city so closely that the ribbons of railways seeking entry from north, east, south, and west attain their end only by plunging into smoky tunnels.

CHILDREN IN THE VIZCAYAN NATIVE DRESS

Photographs by Casa Lux

STREET SCENE IN A BASQUE FISHING VILLAGE

The fish of the Basque coast are reputed to be as excellent as any caught in European waters. The tunny-fish and sardines are the most numerous species, and all Atlantic vessels steaming toward Bilbao pass fleet after fleet of the little fishing schooners, both sail and steam, dancing madly upon the rough waters of the Bay of Biscay.

A MOUNTAIN VILLAGE IN ASTURIAS, WEST OF THE BASQUE PROVINCES

Photographs from Pio Noriega

A MASS FOR THE SHEPHERDS IN THE PICOS DE EUROPA

The Cantabrian mountain range, extending from the Pyrenees along northern Spain, attains almost an Alpine altitude between Santander and Oviedo, in the Asturian provinces. The snow-capped mountains are called Pico or Peñas de Europa, their highest point being 8,668 feet. The highest altitude attained by the range in the Basque provinces is about 5,000 feet.

Photograph by Casa Lux

A CARD PARTY IN THE DRAWING-ROOM STABLE OF A BASQUE HOME

In the summer time the peasant families and their guests spend the heat of the day on the cool first floor of their homes—that portion of the establishment occupied at night by the domestic animals. Note the high cart in the right background.

I have likened the Basque provinces to New England. Now there must arise a slight inconsistency, perhaps, because Bilbao itself is certainly the "Pittsburgh" of Spain. Along the Nervion, between the city and the sea, are some of the world's most famous iron deposits. They were known in the middle ages—so much so, in fact, that Elizabethan writers used the term "bilbo" for rapier, and no less an authority than Shakespeare causes his Falstaff, in the "Merry Wives of Windsor," to speak of his condition in the buck-basket as "compassed, like a good bilbo, in the circumference of a peck, hilt to point, heel to head."

It is largely during the last three decades, however, that vast exploitation has taken place; and now the river is lined with freighters loading ore for Newcastle or for Rotterdam, where it is transhipped into Rhine barges and carried to Krupps and other German iron and steel makers.

But not all of this Vizcayan wealth is exported in its natural state. Basque energy has caused the erection of smelting plants along the river, where steel rails and ship plates are produced. The rails explain why these provinces lead in the matter of Spanish railways, and the steel plates why Bilbao has become Spain's chief shipbuilding center.

NO RESENTMENT AGAINST AMERICA

As far back as 1897 the Bilbao yards launched a Spanish cruiser which a few months later, as a unit of Cervera's fleet at Santiago, was destroyed.

Photograph by Casa Lux

THE MEN OF BASQUE LAND ENJOY THEIR CARD GAME IN THE OPEN

"What did you folks think when that cruiser sailed forth from the Nervion toward Cuba to fight the Norte-Americanos?" I once asked an old Basque peasant.

"Well, hombre," he replied, "we were all about to pack our belongings to move over to our new colony north of Mexico. Our newspapers led us to believe it would be a one-sided affair, and it was—pero al otro lado."

"I don't suppose Yankees are very popular in these parts on that account," I ventured, having known the old fellow for some time.

"Why not? You really did Spain a great favor in taking away Cuba and the Philippines—millstones around our necks."

I thought it well to check up on that latter statement, and found it to be the general opinion. I should say that most Spaniards feel today that the country has a better chance for development minus its colonial possessions.

The Nervion, crossed by several ornamental bridges, divides Bilbao into two almost equal parts, leaving on one side the old town, with its narrow streets—so narrow that wheeled traffic can be used only in two or three of them—and on the opposite side the new modern town, with its wide Gran Via and many other tree-lined avenues.

THE ARENAL, CENTER OF CAFÉ LIFE

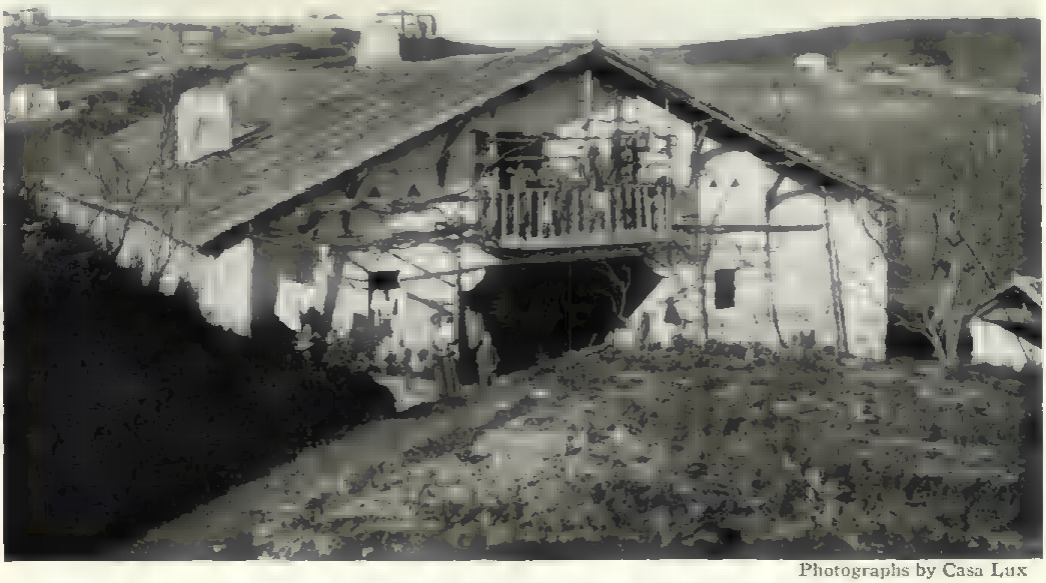
A large plaza in the old town at the foot of the principal bridge, called the Arenal, is the focus of the city's activity. It is here that the evening promenades take place, while a military band often renders real music for the occasion. The Arenal is also the center of the café life, with chairs and tables taking up most of what should be the sidewalk.

The average Basques of the cities and towns are like all other inhabitants of the Peninsula in their love for cafés; but in Spain this is a male institution, a woman being seldom seen therein, in this respect unlike the cafés of France.

Immediately after luncheon and again immediately after dinner, in the evening, husbands, fathers, and brothers retire post haste to the café, meet two or three friends, secure a marble-topped table, and clap their hands loudly for the *camarero*. He hurries up to the table in shirt sleeves

A TYPICAL BASQUE FARM-HOUSE, WITH A HEAVY TWO-WHEELED CART IN THE FOREGROUND

So tempestuous are the winds along the shores of the Bay of Biscay that few of the peasant houses have chimneys. In their stead round holes to emit smoke are cut in the wall beneath the eaves, as here shown.



Photographs by Casa Lux

THE VILLAGE OF PLENCIA, ON THE ROCKY BISCAY COAST

The green hills and fascinating outlook over choppy blue waters have attracted many Bilbao people to this village, where they have summer villas.

Photograph by Casa Lux

A BULL-FIGHT IN A BASQUE VILLAGE

Even the villages in Spain must have at least one bull-fight every year, on the festival of the patron saint of the locality. The arena, or "plaza de toros," in the small towns, is often rather crudely improvised, however. The national sport is as popular in the Basque provinces as elsewhere in Spain. This photograph shows the long blouses worn by Basque laborers.

and long white apron and always receives the same order:

"Coffee, very black—un anisette—and a set of dominoes."

The cafés are often large, and when they are crowded, at the popular hours, with every patron slapping dominoes down on marble-topped tables with what force he can muster, talking in excited tones, smoking cigarettes, and with waiters crying their orders, there reigns what might most properly be called confusion. As it cannot be heard above the other noises, it is scarcely necessary to mention that there is often an orchestra rendering faultlessly some of the world's most classical selections.

After an hour or two at the cafés in the evening, the male of the Basque species hies himself to the theater, this being another form of amusement in which the women participate little except on "dias de moda." He purchases a seat for the "session of 10 o'clock," which performance lasts until considerably past midnight. Thus it is well on toward sun-up before the city loses itself in repose.

HOW BILBAO WAKES UP AND GOES TO WORK

When most northern Spanish cities wake up in the morning certain fixed and recognized noises are heard, certain events transpire, and certain movements of the population take place, and in Spain somehow these little incidents differ considerably from similar ones taking place at the same hour in other countries.

The whistle of locomotives is heard announcing the departure of the early trains, and in Spain the best trains, apparently with fixed intent, manage to depart at about 5 o'clock. Tiny electric cars rumble through narrow streets and across the plazas, under the dusty palm trees, tinkling their little brass bells, or perhaps they haven't any bell at all, the conductor simply blowing from time to time a small tin horn as sign of warning.

Photograph by Casa Lux

LITTLE "SEÑORITAS" OF THE PEASANT CLASS IN BASQUE COSTUMES

The worker appears on the streets with his long blue blouse hanging to the knees, hurrying along noiselessly in his *alpargatas*, like canvas tennis shoes with soles of coiled rope, and his *boina*, a tiny blue cap with no visor, like a small tam-o'-shanter, with a piece of string an inch long replacing the pompon, set at a rakish angle on his head.

Generally there is also a shawl, nearly as large as a steamer rug and of about the same color scheme, rolled up on his shoulders, with a generous piece across the lower part of the face to protect him against the possibility of inhaling pure fresh air.

Seabirds, attracted the night before by the lights of the city, soar over the red tiles of the flat roofs, and, finally tiring of city life, spread their wings for the flight out to their accustomed haunts over the wild Bay of Biscay.

In the older parts of town the iron curtain covering both door and single window of the little stores, taverns, and wine shops of the poorer classes is pushed up with a rattle and the place is then open for business. The church bells call the faithful to early mass, and among them are many women garbed in black, further intensified by the black mantilla over head and shoulders, who slip like shadows through the early morning light.

Bread women call at doors, leaving the large rolls, or panecillos, which, with a generous bowl of coffee and hot milk (half-and-half), form the usual menu for the day's first repast of rich and poor alike. The servant girls, also with alpargatas on their feet and black shawls over their heads, appear, basket on arm, on their way to market for the day's purchases.

Movement commences along the waterfront, where the rattle of donkey-engine is heard, the clanking of large chains, and the hoarse cries of the second mates starting their gangs at the day's work of cargo-handling.

THE "ANGULERO" BURNS THE MIDNIGHT OIL

All that takes place at any of the Spanish cities on the "Mar Cantabrico," as the Bay of Biscay is called in the mother tongue. But at Bilbao there are two incidents that occur in the early morning which, as far as I have been able to ascertain, are unique to this, the largest of the Basque cities of Spain.

Number one. The oil lamps of the *anguleros* are extinguished. Now, anguleros are fishermen who since midnight have been engaged in a peculiar branch of the fisherman's art. They have been catching *angulas*, and angulas, in turn, are a very peculiar brand of fish—little white, almost transparent worms (perhaps it would sound better to call them miniature eels), only two inches long. When a batch of them is fried, however, in olive oil and served in an earthenware dish, with the oil still popping when brought to the table, most connoisseurs will agree that there is method in the anguleros' apparent madness.

This delicacy inhabits the river Nervion and is caught along the stone walls of the quays, being attracted into nets by the fishermen's oil lamps. This helpless little morsel of seafood labors under the scientist's formidable appellation of *Marœnidæ*.

Number two. The shrieks of barefooted, illy-clothed women stevedores are heard.

This requires the explanation that Bilbao, the most important port of Spain after Barcelona, derives its prominence from the heavy outward-bound traffic in iron ore from the near-by mines and the correspondingly heavy imports of coals from Newcastle to furnish fuel for the many Basque industries.

The iron ore is loaded with modern equipment along the river, but the coal is often unloaded by hand or, perhaps, to be more explicit, by head. Women almost exclusively are employed in this dainty occupation. Every day a continuous line is to be seen moving up one gang-plank, with bushel-basket in hand, and down another to the coal hills on shore, with a heaping basketful of coal balanced on each head.

When these toilers gather, shortly after daybreak, to begin work, there is a great row that has to do with preferred places in the line, there being some gang-planks slightly nearer to the coal heaps than others.

In addition to the coal-ships along Bilbao's waterfront are also to be seen freighters flying astern the red and blue banner of Norway. These carriers bring immense quantities of *bacalao*, cod preserved in great chunks like salt pork, which forms one of the chief articles of food, not only in the Basque provinces, but also in Asturias and Galicia.

A MIDDAY MEAL IN A PEASANT HOME

I remember once taking a day's excursion on foot with two Bilbao friends out into the beautiful country-side beyond the famous Church of Begoña. Past midday, after a morning of blazing heat, we came to a little stone farm-house upon a pretty green hill.

The omnipresent iron balcony was in its usual place over the front entrance, but fastened to it was the small branch of a tree, indicating that refreshments were to be obtained within by the road-weary traveler.

Passing around to the back of the house, we were greeted by a fine old Basque peasant and his señora, or, as he would call her, his *mujer* (woman). We were seated at a wooden table under a plum tree, and there ensued what to me was an unintelligible conversation in Euskara.

Photograph by Casa Lux

A PEASANT WOMAN OF THE BASQUE COUNTRY

She is wearing the rope-soled shoes called *alpargatas*.

While we awaited results, I noted that the ground floor of the house was surrounded by a stone wall, open at the back, which formed the support for the second floor. The ground floor was the home of the steers, pigs, and chickens, whereas the human members of the family lived above; but the small, simply-furnished rooms of the peasant's quarters were spotlessly clean.

The farmer's son came in from the fields, walking slowly alongside a pair of steers harnessed to a two-wheeled cart, the popular type of farm-wagon.

At this juncture the mujer appeared with a large earthenware dish of bacalao,

Photograph from Pio Noriega

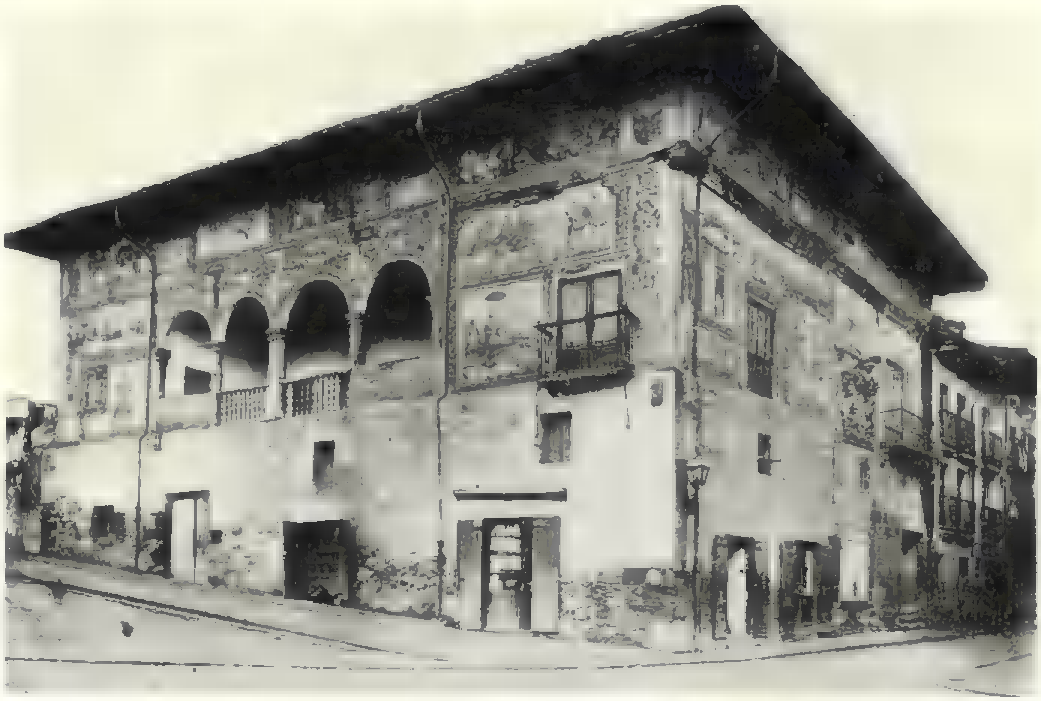
A MOUNTAIN HIGHWAY IN THE BASQUE PROVINCES

The three Basque provinces have an area equal to about twice that of the State of Rhode Island, with a population slightly in excess of 700,000. A peculiar feature of Spanish railways is that they have a different gauge from those of France, for strategical reasons. However, plans were ordered drawn several years ago for a double-line standard gauge railway from Madrid to the French border.

Photograph from Pío Noriega

TOWER OF A FIFTEENTH CENTURY CASTLE IN POTES

This quaint little Asturian village is in the heart of the "Cantabrian Alps," not far from the city of Santander.



Photograph by Casa Lux

A HOUSE WITH AL FRESCO PAINTINGS IN GUERNICA

Guernica was the seat of the diet of Vizcaya, where the Basque deputies met every two years. It still retains several interesting architectural relics of the days when the Basque provinces were independent.

Photograph by Casa Lux

HERALDS OF THE TOWN HALL OF BILBAO

Like the "beef-eaters" of the Tower of London and the picturesque Swiss Guards of the Vatican, these heralds retain their mediæval costumes. Note the coat of arms of Bilbao which they wear.

boiled with just a touch of garlic and covered with delicious scarlet sweet peppers, while around the sides of the dish were *garbanzos*, giant chick-peas of fine savor.

Before each of us was set a jug of *chacoli*, an excellent white wine of peasant make. For dessert there were luscious red plums of Vizcaya. It was a repast that will linger long in my memory.

One derives a false picture of this center of Basquedom unless the little eight-mile side-trip from Bilbao down to the sea is taken. Paralleling each side of the river is an electric tramway, and paralleling each of these in turn is a steam railway.

Town after town is to be seen on the way. Along the left bank of the Nervion shipbuilding yards are succeeded by immense iron foundries and smelters, and dozens of steamers are tied up alongside these industrial plants, all combining to fill the air with the smoke of man's activities.

The pretty green hillsides far beyond the river are marred here and there by patches of reddish brown color, where, in the distance, can be seen the puff of the little locomotives of the ore trains, and occasionally the rumble of a dynamite explosion is heard. These are the mines, and from many of them, stretching for miles through the air, to the loading berths on the river, are aërial cables, to which are fastened buckets full of red ore moving continually from mine to river, with parallel cables carrying back the "empties" to the far-away brown patches on the hillside.

THE "FLYING FERRY"

The river winds its way between these rich hills, and finally, rounding a corner, the sea comes suddenly into view. The strong sea breezes of the Biscay blow away the smudgy fog of industry, and one emerges again into Sunny Spain.

At each side of the river mouth is a town—Portugalete on the left and Las Arenas on the right. A beautiful and unusual bridge, connecting the two, forms a fitting monument to mark the union of the Nervion with the waters of the Atlantic. It is called the Puente Trasbordador (see illustration, page 84).

On each river edge is a great tower of steel, something like a wireless tower, but more massive, over two hundred feet in height. These towers support a light iron bridge one hundred and fifty feet above the river, under which the largest steamers pass and repass night and day. From this bridge is suspended a "flying ferry" supported by a network of fine wire, which is pulled back and forth across the river. It hangs to within a few feet of the water.

We decided to cross one Sunday when there was a festival at Portugalete. Approaching the window, we demanded:

"Un billete, to go and to return, how much?"

"Dos perros gordos."

Two "fat dogs," as the Spaniards call their large ten-centime pieces of copper.

Photograph by Casa Lux

A MEDIEVAL TOWER IN THE BASQUE COUNTRY, WITH MODERN CORRUGATED IRON SHEDS IN THE FOREGROUND

Then we crowded onto the ferry with some seventy laughing men and women bound for the festivities on the opposite side. The whistle blew, the bell rang, the iron gate clanged shut, and we moved smoothly out over the river through the air, as it were. The opposite shore was reached in one minute, but it was a rather delightful little minute at that.

Portugalete has narrow streets, and its balconied houses stretch picturesquely up the hillside, while at the top is an enchanting little Gothic church, which is always the way in Spanish towns. They always seem to cluster around a church or two for protection. Indeed, in Bilbao, there are no less than 75 of these protectors.

Las Arenas, opposite Portugalete, is a modern village of seashore villas which has become popular as a summer resort. Here the Club Maritimo has its pleasant club-house, overlooking the harbor entrance, where the youths of Bilbao go in the afternoon to drink chocolate, dance, and play at *caballitos*, which is better known by its French appellation, "petits chevaux."

THE KING MAKES AN ANNUAL VISIT FOR THE YACHT RACES

The King comes nearly every summer to the yacht races and causes this little outing place to be for a few days the social center of the kingdom. He generally goes over to picturesque Portugalete during his stay in this section.

Photograph from Pio Noriega

A PANORAMIC VIEW OF THE HISTORIC VALLEY OF COVADONGA, FROM WHICH VANTAGE POINT THE ASTURIANS BEGAN THE RECONQUEST OF SPAIN FROM THE MOORS

Here Pelayo, the Goth, took refuge, with three hundred devoted followers, and during the first quarter of the eighth century waged relentless warfare against the followers of Mahomet. The title of "Count of Covadonga" is assumed by the King of Spain today.

There are few harbors more beautiful in setting than this, with one breakwater of stone stretching far out into the sea from the Portugalete side and another, of equal length, from the Las Arenas side. Within the breakwaters are vessels riding at anchor on the deep blue water, a few steamers and many small fishing schooners, for the fresh fish of the Basque Sea are numbered high in the record of fish excellence.

THE SARDINE WOMEN MAKE A STRIKING PICTURE

The sardines, according to local repute, are better than those of Bordeaux, and I am not inclined in this instance to question the correctness of local reputation. One of the unique little pictures of the Basque towns on the sea is that of the barefooted sardine women, walking with infinite and unaffected grace through narrow streets of stone flagging, with great square wooden trays balanced on their heads. On the trays are hundreds of silvery fresh sardines laid out in neat rows. And the women cry, "Sardinas, sardinas vivas!" indicating that their wares are still alive.

They tell a story in Portugalete about one of the visits of the royal family at yacht-racing time, when a large crowd was watching the arrival of their popular King and Queen. Suddenly some one shouted, "Viva el Rey!"

"Viva! Viva!!" echoed the crowd in a mighty voice.

The yell-master continued, "Viva la Reina!"

"Viva! Viva!!" came the answering volley from a thousand throats.

The leader then submitted for approval, "Viva España!"

"Viva! Viva!!" came the prompt reply.

At this juncture a sardine woman turned the corner. Her voice had the same quality of carrying powers as that of the popular yell-master, as she cried, "Sardinas, vivas sardinas!" and before the excited throng could restrain itself it had roared forth its approving "Viva! Viva!!"

EACH OF SPAIN'S 49 PROVINCES HAS ITS DISTINCTIVE INDIVIDUALITY

For administrative purposes Spain is divided into forty-nine districts or provinces. Regionalism is so strong that one may almost continue, and state that there are also forty-nine national languages, forty-nine national costumes, forty-nine national dances, and, last but by no means least, forty-nine national dishes.

This would, perhaps, be a slight exaggeration, but the fact remains that the inhabitants of each district differ noticeably in characteristics from all the others. A man from Barcelona is first a Catalan and second a Spaniard. Likewise an inhabitant of Coruña is less Spanish than Gallego, and a person from Bilbao places his Basque nationality before his Spanish adherence, and so on.

Thus, the Bilbaino holds that no dish can equal in excellence his *bacalao vizcaino*, and the citizen of Vigo turns up his nose at all foods except his own native *pote gallego*, a concoction of potato and cabbage boiled in water with lard and eaten with bread and garlic. The Valencian has his *arroz valenciano*, which is really excellent—rice cooked in oil, to which tender bits of meat and sweet peppers are added. The proud Castilian sticks through thick and thin to the *puchero*, the Sevillaño to his beloved *gazpacho*.

THE BASQUES ARE GREAT BALL-PLAYERS—NOT BASEBALL, HOWEVER

This spirit of regionalism must at one time have divided in slight degree even the three Basque provinces, the smallest in Spain. It is said that in the olden days the men of Vizcaya wore blue caps, those in Guipúzcoa preferred red ones, whereas the men in Álava were often to be seen in white headgear, the caps, or "boinas," in each case being precisely the same in style and shape. In recent years, at any rate, this distinction has entirely disappeared and blue seems to be the *dernier cri* as to color for men's headwear in all three provinces.

Among other qualities of excellence, the Basques are the leading athletes in Spain. They supply a goodly number of *torreros* for the bull ring, and no one, I believe, will dispute the fact that even a bull-fighter must be an athlete in pretty nearly the pink of condition. Basque prowess in the arena is placed first because of its preëminence as a sport of the Spanish nation, but the really noteworthy

Photograph from Pio Noriega

THE GROTTO OF COVADONGA (SEE ALSO PAGE 80)

It was here that King Pelayo withstood the onslaughts of Al-Kamak, the Moor. A sarcophagus within the chapel is supposed to contain the remains of the Christian hero as well as those of his wife, Gandiosa, and his sister, Hormesinda. The occupation of Spain by the Moors is still evidenced here and there, even in the northern provinces, by bits of architecture, watch-towers, and names of villages and streets.

excellence of the Basque sportsman lies in no more nor less than playing ball. He is a born ball-player and knows the game from all angles—factory hand, miner, and manager alike.

Alas, it is not baseball, but the great Basque ball game, *jugo de pelota*—democratic and popular as is the national game in America. One sees the boys in the villages hard at it, and in the cities the fond Basque parent, like the American, is sometimes caused a violent shock by the smashing of a pane of glass in the dining-room, caused by the unwelcome entry of a pelota, a little smaller and a little harder than a baseball.

PELOTA HAS MADE ITS WAY TO SPANISH AMERICA

Pelota excels in its professional form and has become so popular that games may be seen not only in the Basque provinces, but also in Barcelona, Madrid, and even in Havana and Buenos Aires, the players being of Basque parentage in nearly every case.

The game is, perhaps, a more violent form of sport than baseball, and in many respects closely resembles squash rackets. Only four players are engaged—two on a side—dressed in white trousers, white blouse, and white shoes, one side wearing wide red sashes of silk around the waist and the other side blue.

The courts, called *frontones*, are 36 feet wide and 210 feet long, with floors of cement and with a high cement wall at one end and along one side.

Each player wears a sort of cestus on the right hand, firmly fastened to the forearm, which constitutes the racket or bat.

The ball is thrown from the curved cestus, at terrific speed, against the front wall, so that it usually rebounds at an angle against the side wall before touching the floor, and, as in rackets, the players alternate in returning the throw. The game becomes so rapid in action at times that the ball is scarcely visible to the "pelota fans" along the side line and can be followed only by the sharp crack with which it hits the front wall.

Each failure to return the ball counts a point to the opposite team, but they do not call it a point; that would have no Spanish touch; it is called by them a *tanto*, in other words, a "so-much."

Photograph by Casa Lux

A MEDIEVAL CROSS WITH OLD AND NEW TESTAMENT CARVINGS: DURANGO

The quaint old town of Durango is situated in a wide upland valley inclosed by lofty mountains. Its chief pride is this cross and San Pedro de Tavira, one of the oldest churches in the Basque provinces.

Photograph by Casa Lux

THE VIZCAYA BRIDGE BETWEEN LAS ARENAS AND PORTUGALETE

This is the "Puente Trasbordador," under which the ocean-going steamers pass on their way up the Nervion River to Bilbao. A "flying ferry" hung from a high cross-bridge, carries as many as seventy persons on one trip across to Portugalete, on the opposite bank. There is a bridge of similar construction at Duluth and another at Marseille.

Another popular sport in the Basque provinces is one confined to the iron mining regions—that of stone-drilling. Only the strongest of miners are physically capable of engaging in these contests of muscular force, and there have been many instances of death from overexertion during these battles of human energy thrown against large blocks of rock.

It would be difficult to find a sport anywhere in the world that so taxes the power of endurance of the participants. It is in many ways a cruel spectacle. I once mentioned this to a Basque, and his scornful reply was:

"Yes, perhaps; but not half so cruel as your prize-fights in America."

HOW THE STONE DRILLING CONTESTS ARE STAGED

These games are the occasion for great festivities in the mining towns. The champion from one little mining town will be sent to combat against the native son of another, and the betting, as well as the feeling, runs high.

The home champion, generally a giant in stature, has been the popular hero of his district for weeks. In the Basque mining sections, as in those of other countries, wages are high, and much of it is thrown away in drinking and gambling. Thus it happens that the hero spends the days preceding the *fiesta* in consuming the fine wines, champagne, and heavy dinners thrust upon him by his admirers rather than in intensive training, the idea apparently being that he cannot fail if he has been generously fed upon the fat of the land for a sufficient period.

The day arrives. The invading *barrenador*, or stone-driller, enters the town, supported by most of the male population of his neighborhood with pockets full of *duros* to be placed upon their favorite.

The town dignitaries appear upon one of the balconies of a prominent house on the small, carefully swept plaza. The other balconies all round the little square are soon filled, chiefly with women, while the men crowd onto the plaza itself, as close as possible to the rope which marks off the rectangle in the center where the contest is to take place.

Great excitement is in the air as the last bets are placed. Two pairs of large oxen, straining at every step, slowly drag into the open space enormous blocks of stone, leaving behind them tracks of heavily packed earth.

This is a diversion of primitive nature, probably so popular because all of the spectators are those who are faced with the dire necessity of earning their daily bread by the hardest sort of physical toil. To give "tone" to the occasion, there is first a short contest of wood-hewers, called in the Basque tongue *aizkoralaris*, who chop through logs laid out in the plaza. This, however, is merely an hors-d'oeuvre.

Then exclamations of excited anticipation are heard; the crowd presses a little closer to the roped arena.

The two contestants appear and are loudly applauded as they remove caps and alpargatas and as each, barefooted, climbs upon his block of rock.

Each rock has marked upon its top surface eight rings to indicate where the holes are to be drilled. The contest lasts two hours, and the winner is he who either has completed the perforations of the eight holes or who has advanced farther toward that end.

The barrenadores, standing upright on the blocks of stone, place their heels together, the feet forming a right angle close to the indicated marking on the rock. Between these bare feet the heavy iron bar in their powerful hands must rise and fall, each stroke deepening the hole.

The slightest deviation in aim of any stroke, with the Herculean force of the barrenador behind it, would surely destroy a foot. Little fear of such an accident, however, for their arms move up and down with the precision of a machine.

CONTENDERS ARE COACHED BY "GODFATHERS"

Each of the contenders chooses a friend or two to act as coaches. These "godfathers," as they are called, stand near their champion, moving their bodies up and down like a pump handle, serving as a pendulum to regulate the strokes of the steel bar. They signal each blow with a "Haup—haup."

They tire sooner than the barrenadores themselves, and have to be replaced several times during the monotonous two hours.

© E. M. Newman

AT SAN SEBASTIAN, THE MONTE CARLO OF SPAIN

Its bathing beaches and casino attract the aristocracy from all parts of the Peninsula to the second city of the Basque provinces. Monte Igueldo projects abruptly out into the Bay of Biscay from one of the beaches. Its ascent is made easily by means of a cable railway. On its summit is an abandoned lighthouse constructed in 1778.

Enthusiasm is at high pitch, however, during the last quarter-hour. The competitor who is seen to be losing is jeered by the adherents of his winning opponent, while his own villagers, whose combined wagers on his victory may aggregate sixty thousand duros (dollars), hurl vile epithets at their now disgraced hero.

"More force, you pig!"

"May the thief die!"

The contest usually ends in a debacle. High words, and sometimes a free-for-all fight ensues.

The winner is borne away on his friends' shoulders to a nearby tavern, where wine will flow freely. The poor defeated barrenador slinks off alone, anxious to avoid the eye of man; in all probability he will never return to the village where yesterday he was the most popular inhabitant.

THE ARRESKU, THE FAMOUS BASQUE DANCE

In the early evening, after a festival of any kind, dancing generally takes place, in open air, of course, as often as not in the village plaza. The students and other youths from the cities love to attend the village fêtes. Most interest is taken in the *arresku*, the great dance of the Basques. I have many times been instinctively fascinated in watching this spectacle, which slightly resembles a Polish mazurka.

The sound of the pipe and tabor are heard in the lively cadences of the arresku. An expert dancer, master of ceremonies, as it were, advances in the space set aside for the dancing. Throwing his boina on the ground, he moves with a series of minute, rapid and intricate steps toward the woman he has chosen to be the "queen of the ball." And no Basque woman, no matter how high her social standing, will refuse this honor. Señoras of noble rank have been seen taking part in this ceremonious dance opposite to peasant and sailor.

The arresku is all a mass of intricate movements of feet, body, and arms, even the fingers playing their part, the participants advancing and retreating. Always the man is in the foreground, and he simply seems to talk with his feet, while scarcely the finger tips of the partners touch during the whole dance.

SAN SEBASTIAN LACKS BASQUE ATMOSPHERE

In a description of the "New England of Spain" some mention must be made of San Sebastian, the second city in the Basque provinces, but the least Basque in characteristics. It is a modern town on the Bay of Biscay only a few miles from the French frontier, the summer residence of the royal family, and the most popular of Spanish resorts. It has a fine casino and an unrivaled bathing beach. Indeed, in many ways, San Sebastian is a serious rival of Monte Carlo.

The last night of my last visit to Spain was spent at this famous watering place. It was in winter; hence many shops and most hotels were closed. The casino offered the only amusement, and there were two friends playing at "trente et quarente" who attracted my attention—one a Castilian from Madrid, the other a Catalan from Barcelona.

Even in the excitement of gambling, the marked regionalism of Spain could not be forgotten. They would play a while, then retire to the "bar Americano" to quench their thirst and to enter into a loud discussion as to why or why not the government should grant "autonomia" to the provinces of Catalonia. Their discussion was much more heated than their cognac. Then they would lock arms and return to the gambling tables.

INDEX FOR JULY–DECEMBER, 1921, VOLUME READY

Index for Volume XL (July–December, 1921) will be mailed to members upon request.

A ROUGH DAY IN THE BAY OF BISCAY

Many a "rookie" in our new merchant marine well remembers his first storm at sea and his sudden loss of interest in all forms of nourishment, when walls of green water came tumbling on board, the ship wallowing till her ribs cracked.

THE GEOGRAPHY OF OUR FOREIGN TRADE

By Frederick Simpich

Author of "Where Adam and Eve Lived," "Mystic Nedjef, the Shia Mecca," "The Rise of the New Arab Nation," "Along Our Side of the Mexican Border," "Every-Day Life in Afghanistan," etc.

OCEAN trade began on that eventful day when restless, primitive man, piling his surplus grain and skins into his *baggala*, hoisted his clumsy mat sail and put to sea, venturing away to visit and barter for the first time on that distant, unknown isle whose peaks he could discern on clear days from the heights of his own coast home.

What a picture to conjure with—that first "sailing day"!

How fascinating to visualize that mud-walled village sprawling along a palm-fringed coast,* with a wailing group of half-nude, shapely brown women, bizarre in jangling anklets, shell beads, and hammered earrings, calling wildly to the stars to save their men from the perils of the sea; timid, wondering children; bearded, turbanned old croakers of the tribe sagely predicting calamity for the foolhardy voyageurs.

Then followed weeks of despair among the wives, and finally the triumphal return of the sailors, their crude craft piled high with strange, delicious new foods and odd woven stuffs. Perhaps there were Bahrein pearls, amber, and beautiful slave girls for the master's harem, and thrilling tales to tell of great adventure, new gods and new life on far shores—*the beginnings of geography!*

THE SEA-TRADER IS THE PRACTICAL GEOGRAPHER

To me, sea-traders have always seemed such practical geographers.

Columbus and Magellan were the kings of explorers, of course; Drake and Hawkins were gentlemanly pirates; Peary and Scott courageous scientists, whom the world is proud to honor.

But the sea-trader! Whether he runs his own foul little tramp schooner or sits in New York or London and directs a great merchant fleet, he must know not only his map, his ports, his winds, currents, and climates, but his people, their politics, their products, needs, whims and manners, their language and their prejudices.

How many of the once blank spaces on the map have been filled in for us, not only as to the names and locations of towns, mountains, and rivers, but also as regards the true characteristics of a people, by the world's great traders, like the fur-buyers and the tea merchants! How intimately many a Yankee trade scout knows his world map!

THE ROMANCE OF GEOGRAPHY IN THE PURCHASE OF HAIR

In Hamburg recently I met a breezy man who owns a brush factory in Brooklyn.

"We make brushes for teeth, typewriters, hats, horses, or shoes, or to paint anything from a miniature to a barn," he told me. "I'm off now to Russia to look for pigs' bristles or horses' tails. Get in? Of course! I'll get in by Riga or Odessa, unless the Bolsheviks drive me back. If they do, I'll go around by Vladivostok, or go up to Peking and try to work in via Kalgan and Urga.

"Last week I had to hire an airplane to get to Warsaw, and maybe I'll have to do it again. But I'll get into Russia somehow.

"The boys in our New York office call me the Russian Hair Hound, because if there's any good, stiff hair flying loose anywhere between Baikal and the Baltic, I always manage to grab it and bring it back to Brooklyn to make brushes."

The names of foreign places mean more to such a man than mere red dots and circles on the map. Geography to him is more than the science of places, more than a mere answer to the geographic question, "Where?"

THE TRADER KNOWS HIS WORLD CUSTOMER

Men like the "Hair Hound"—and there's a host of his sort among our modern traders and exporters—can do more than "bound" Burma or name the towns in Turkestan. They can tell you what, and

*Tradition says that the Phœnicians or the tribes on the north shore of the Persian Gulf were probably the world's first sea-traders.

GERMAN WOMEN HANDLING MAIL

Many of the parcels-post and express packages in European countries are handled by women. In world trade the parcels-post system plays an enormous part. Millions of pounds of food, clothing, and manufactured goods are sent by this service every year.

A MAIL DELIVERY IN SWITZERLAND

"EVERY TIME AN AMERICAN KIDDIE WRECKS AN IMPORTED TOY IT MEANS MORE TRADE FOR THE TOY-MAKERS OF NUREMBERG"

This picture is not an interior view of a taxidermist's shop nor a miniature Noah's ark; it is simply a toy shop in full blast.

DECORATING CHINAWARE BY HAND

Every time a waiter in Denver drops a plate it means business for a potter in Dresden, or did before the war. For years our big hotels depended largely on the pottery-makers of Saxony. In recent years, however, what from war, fuel shortage, strikes, and other troubles, the exports of chinaware and glass from Germany to the United States have been very small.

HOPS FOR HOME BREWERS

For generations a great annual hop market has been held at Nuremberg. Every autumn buyers from breweries all over Europe swarm to this old town, where giant bags of hops for sale are piled in the streets.

how much, the white or black or brown races in far-away lands are producing above their own needs, and they know in what language to write to them, and what steamer line or connecting railway offers quickest, cheapest freight haul.

Figuratively, these men know whether Fiji or Formosa wants furniture or fountain pens, calico or corned beef, pink pills or canned peaches, baby-grands or baby buggies. They know, for example, much more of France than was contained in that classic paragraph of your old school geography which, after naming the cities and rivers, generously added: "The inhabitants are a gay and frivolous race, addicted to light wines and dancing"!

A KNOWLEDGE OF GEOGRAPHY VITAL TO THE INTERNATIONAL INVESTOR

Trade has been called the "economic fruit of geographic environment"; and whether a bold Yankee firm pioneering for trade will invest the first million in a foreign land depends almost slavishly on geographic considerations.

A well-known banker has vigorously asserted that commercial geography is the most important part of an international banker's education: that is, before he opens a branch in Cairo or Calcutta or urges a merchant to seek trade there, he must know the local situation not only as to money, politics, and native characteristics, but also as to climate, rainfall, crops, and communications.

Prof. J. Russell Smith says: "That the trader should know the people with whom he trades is a truism. . . . We must give them what they want. I recall in this connection a ludicrous old story concerning the clock trade in Africa.

"The English had been supplying a great number of cheap alarm clocks to a jungle tribe. Suddenly the trade ceased. Investigation showed the entire clock trade had been taken over by a German firm, which had, after looking into it, found out what kind of a clock the African really wanted.

"The native had no knowledge of time; he merely liked to look at the shiny nickel thing in his grass hut, and to hear it tick. With this cue, the German had hurried

"COAL IS LIFE" AND THE GREATEST OF ALL CARGOES

Germany, under the terms of the Versailles Treaty, must deliver millions of tons of coal each year to the Allies. Because of labor shortage, women are used on much surface work.

THE PORT OF DANZIG, NOW A NEW FREE CITY, POLAND'S "WINDOW TO THE BALTIC"

INLAND WATER TRANSPORT IS ONE OF GERMANY'S GREATEST ASSETS

Some of the canal-boats are still poled or pulled by men, though many are equipped with engines.

PUTTING A BOVINE PASSENGER ASHORE

More than 20,000 steamers, barges, and tugs—over 5,000,000 tons of shipping in all—ply the Rhine. Here is an example for America in the use of inland rivers.

home. If it was the 'tick' the African wanted, he would supply it. So out came a kind of clock that sounded like a boy with a tack-hammer. Delight ran through the leafy woods of Africa, and the German clock went like wildfire!"

HOW OVERSEAS TRADE DEVELOPED

A hasty sketch of the high points in the history of world trade proves how much our map and its peculiarities have influenced all buying and selling.

It was the geographic pioneering of bold Latin sea-rovers in the fifteenth century that gave Europe its first adventure in ocean commerce. Up to that time, trade between nations had been carried on by caravans or mere coast boats. Even to this day it is possible to trace some of the old overland "silk routes" from China to Syria, to Poland, and to the Rhine; they always began in one great political center and ended in another.

In those days, too, sea-traders with cargoes from the Levant began to feel their way across the Mediterranean, while Chinese junks even ventured around to India and up the Tigris. Incidentally, it was this timid venturing along coast routes that maintained the commercial supremacy of Italy from Roman times till the Renaissance, Italy's bootlike peninsula making of her a great mole or pier extending down into the Mediterranean.

Because of the warlike Turks and their depredations on the caravans that followed the overland trail of Marco Polo, Europe became more and more anxious for a sea route to the legendary riches of India. And finally, thanks to doughty old Vasco da Gama, one of the boldest geographers of his day, the staunch windjammers of Lisbon reached the west coast of India. Six years previously, the greatest of Italian navigators had put to sea flying the flag of Spain and found a New World.

Thus these daring sailors not only put new continents on the map, to the consternation of the geographers of that day, but they brought on the greatest political and economic crisis that the world had ever known.

For two centuries Europe was shaken as a result of these voyages, and the centers of power shifted from the Mediterranean to the Atlantic coast—that is, from Venice and Genoa to Spain and Portugal; then to France, to Holland, and finally to England.

When bigger ships came into use, and when the importation of gold, diamonds, slaves, silks, and spices was followed by the import of more bulky raw materials, which were in turn exported in the form of manufactured goods, England crowded ahead. Her splendid geographical position, her harbors, her coal and iron mines, enabled her to gain the mastery of the seas.

WHEN AMERICA TOOK ITS PLACE AMONG SEA POWERS

Tracing the mastery of the seas down through the centuries, from the days of the supremacy of Tyre, nation by nation, until England assumed the leadership, William Brown Meloney, in "The Heritage of Tyre," says:

"In England's hands the Phœnician trident became a magic wand. A handful of islands burgeoned into such an empire as Rome might have been had she worn her sword more in its sheath. Britain became Great Britain, London a second Tyre, and Bristol another Venice. Yet in a moment when Britain was never so powerful, never so great, a new people—a people whom the family of nations barely deigned to notice—claimed coheirship. In the eyes of an astounded world the United States established her birthright in the freedom of the seas as no other heir of Tyre had ever done."

What heart does not thrill at the memory of those proud days of the *Flying Cloud*, the *Belle of the Sea*, or the *Red Rover*, when America carried 92 per cent of all her overseas trade in her own bottoms! When our "cod-headed, mackerel-tailed" clippers could make the Calcutta run in 95 days; when the famous *James Baine* logged 21 knots with mainskysail set and made a world record!

The story of the misfortunes of the sixties and the decline of our merchant marine is familiar. Even when Roosevelt sent The Fleet around the world, we had to depend on foreign colliers.

OUR MERCHANT MARINE RETURNS

But today, from Memel to Melbourne, our merchant ships—stupendous heritage

© Chas. Trampus

AN INCIDENT OF SEA TRADE: A HAMBURG TUG THAT "WENT ON THE BEACH" AT HIGH TIDE AND REMAINED THERE

of the World War—are poking their newly painted noses into every harbor of the world.

Look at a Shipping Board chart and see how our lines encircle the earth. With a trained, alert consul in every foreign port, his big freighters on every sea and a navy to protect them, Uncle Sam has indeed fully atoned for the misfortunes of the sixties; he has vindicated himself and recovered his rightful place among sea-traders.

But to hold this place he knows he must fight, fight boldly, skillfully, and doggedly, with all the deft weapons of commerce and diplomacy; for the war so upset world economics that he now finds himself in an unprecedented international position.

Other nations owe him more than ten billion dollars—three times his own national debt in 1914. A swiftly rising immigrant tide flows to America in a human stream from all the lands of Europe. Every week our factories turn out shiploads of goods above our own requirements, for which we must find markets abroad, in competition not only with our late allies but with other nations now struggling desperately for economic life.

THE STELLAR RÔLE OF THE AMERICAN CONSUL IN THE DRAMA OF TRADE

And now, as in that keenly competitive commercial era of the old Venetian traders, no actor plays a more interesting or adventurous rôle than the consul.

In this war-after-the-war, this big battle for world trade, our consuls are scouts and reporters in foreign lands. They keep us informed by mail and cable not only on every phase of our own foreign business, but on the activities of world competitors, so that we may shape our policies accordingly.

In the State Department at Washington there's a big map of the world bristling with colored pins, like a war map of the general staff. This map shows where our consuls are posted. There is a dense flock of pins covering Europe and Latin America and thin patches over Africa and Asia.

These pins indicate how enormously trade is ruled by the peculiarities of the map and the distribution of various races and industries.

Photograph by L. and A. Schaul

THE GHOST SHIP, A MARINE WORK OF ART

This collaboration of wind and waves and Jack Frost demonstrates what a voyage to northern seas in winter may mean.

A BLACK FOREST WOMAN SPINNING HER FLAX

Here, as in the Spreewald, the oldtime spinning-wheel is used.

Our merchant fleet in foreign waters is the special charge of these consuls. If an American ship "piles up" on the rocks, the nearest Yankee consul takes charge of the wreck and cares for the crew and passengers. Mutinies and tariff tangles, quarantine and emigrant trade troubles, are all aired before the consul, and the American seaman out of a berth in foreign parts is sure of aid at the Sign of the Eagle.

In fact, so heavy has the consul's task become, under the extra burdens imposed by our enlarged fleet and increasing trade, that the expansion and further improvement of our foreign service is imperative if we are to protect adequately our people and their interests overseas.

Many countries doubled their population in the last century.

In Berlin, where I write this, the theory prevails that overpopulation was the indirect cause of the war. Ratzel, a German writer, says that since population grows while the earth's habitable areas are fixed, the earth must be made to yield more in order to feed its increasing inhabitants; that thus land values rise, and states are led to fight for more territory and to seek foreign markets.

THE NOMAD YIELDS TO THE FARMER

Nations can no longer measure their greatness, as the Romans did, by counting the tribes they have conquered; today power is shown by the use a nation

WHERE THEY KEEP THE PIG IN THE PARLOR

The United States handles three-fourths of all the world's pork exports, and all over the world the proportion of pigs to people is decreasing. Among European peasants, as among the Chinese and Malays, no other animal is more highly prized or so carefully nurtured.

makes of its resources and the extent to which it buys and sells overseas.

The picturesque nomad of Arabia or Turkestan, though he contributes occasional wool and hides to the world's trade, is not really worth his space on the map, judged by modern economic standards. So, gradually, in Egypt, Mesopotamia, and western Siberia, irrigation, railways, and the stubborn tide of immigrant farmers are forcing the nomad to abandon his roving life and go to work or go the way of Lo, our poor Indian.

MIRACLES OF CHANGE WROUGHT IN THE NEAR EAST

In the Levant the geographical consequences of war have affected the trade of the world to a striking degree. Boundary lines have twisted, caliphs have gone down and kings come up. Over all is the shadow of the famous Bagdad Railway and the odor of oil.

Persia, fighting bankruptcy for 400 years, is suddenly galvanized into new life by the Anglo-Persian Oil Company's great works on the Karun.

A whole world watches the mandate experiments in Mesopotamia and Syria, speculates on the problems of Palestine and its Jewish home, and follows with interest the struggles of Armenia and Georgia toward democracy.

Old caravan trails, blazed long ago by Hittites, Medes, and Persians, are being abandoned as new governments, new borders, and new railways bring new channels of traffic and sweeping changes in the trade geography of this old Bible land.

Obscure, squalid, and once little-known ports are busy with new life. England is spending millions at the Palestine port of Haifa. Basra, old haunt of Sinbad the Sailor, becomes again, after ages of neglect, the great port of the Persian Gulf.

MARBLE FOR BAR-ROOMS, BATHS, AND TOMBSTONES

These blocks are being hauled from the famous quarries at Carrara. The Italian driver sits on the ox-yoke, riding backward, to get a more convenient crack at the lazy oxen. From this fine marble everything, from vases and Venuses to tubs and monuments, will be made.

MERRY CHRISTMAS!

Turkeys herded in the streets of Durazzo, Albania. These birds are driven across country to market, as cattle are driven in our country.

A STREET SCENE IN SMYRNA, WESTERN TERMINUS OF THE ANCIENT CARAVAN TRAILS FROM ASIA TO THE MEDITERRANEAN

Bagdad, asleep for a thousand years, now has telephones, "movies," "flivvers" and electric fans, new railways in three directions, and airplane flights to Mosul and Teheran. Yet when I lived there, ten short years ago, we were often shut off from civilization for weeks by Arab wars. Bedouins, carrying their spears, rode through the streets on camels, and at night a nervous Pasha closed the great gates of the walled city to shut out marauders from the desert.

WHAT AMERICA GIVES AND WHAT SHE RECEIVES

Look at our steamship lines as marked on a map and see how foods, clothing, machinery, manufactures, and raw materials flow up and down the world and around it, like the currents of air and water.

Our own trade routes run everywhere, but the heaviest lines go to Europe and the other Americas; then to Asia, Oceanica, and Africa.

More than half our imports are in crude or partly manufactured form; food makes up less than one-fourth.

With the break-up of the cattle ranges in our own West, we depend more and more on Mexico and South America for beef. But even these great cow countries cannot feed the whole hungry world indefinitely, and many cowmen say the day is coming when the vast grassy plains of Mongolia and eastern Russia, now so scantly utilized, will be the grazing grounds for additional millions of sheep, cattle, and goats, and that the Mongols, the Kirghiz, and the Turkomans may become the future cattle kings of the world, with packing plants from Urga to Samarkand.

From the hot lands come raw materials like Philippine hemp, Indian jute, Mexican sisal, Brazilian and African rubber. From South America and Asia we get hides, skins, and bristles, while wool comes from Argentina and Europe.

Our trade current from the tropics has grown vastly in recent years; so has our exchange of goods with Asia and the East Indies, where we trade machinery, drugs, flour, and manufactures for silk, fibers, hides, coffee, tea, and rice.

Borne by these same currents, the Yan-

A THRESHING-MACHINE IN RUMANIA

Horse and cow power, with a girl to drive. Here, too, an important market awaits the American salesman of harvesting-machines.

A PUBLIC HORSE MARKET IN LOWER HUNGARY

In America our old-fashioned "county fairs" are dying out. In Europe, however, the fair is still an important trade factor. The annual fairs at Leipzig and Danzig are visited by buyers from all over the world. The last Leipzig fair was attended by 12,000 buyers, representing 26 countries.

IN THE POPULAR MIND, HUNGARY IS THE HOME OF RHAPSODIES—AND GOULASH

It is also a wonderful storehouse of foods, in normal times. Its thrifty folk grow and export fruits, vegetables, grains, and meats.

kee type of culture is carried to all quarters of the globe.

Riding a mule along the Chinese wall, I once came suddenly on a battered tin sign which some wag had nailed to that old Tatar barrier. It spoke of a town far back in America, a pleasant place by Lake Michigan famous long ago for a fluid our fathers fancied. Even the ubiquitous Yankee trade-mark breathes a geographic psychology all its own. From the mud walls of Bombay to the billboards of Brussels, our familiar advertising words and pictures, advance agents of foreign trade, cry a rude Yankee welcome to the wandering American.

Get off your steamer at any busy overseas port and these American signs boldly greet you, inviting you to eat something "Made in the U. S. A.," or drink it, or rub it in your hair. Esthetic souls may shudder, but to me there is something friendly, neighborly, in these familiar signs and phrases; they hint at old times and places, they suggest *home*.

Our consuls say the theft of these Yankee trade-marks is a piracy carried to amazing lengths. The official bulletin of a certain government recently showed that in one month a local pirate had registered 50 American trade-marks, for the evident purpose of exacting blackmail from the rightful owners when ready to enter that field.

RIVERS AS TRADE FEEDERS

In world trade, coast cities grow greatest when built on harbors that connect by rail or river with inland regions of dense population and large production.

The sea made New York great and brought wealth to Baltimore and New Orleans. Hamburg, as a trade-feeder, serves inland Europe as far south as Vienna and Prague. Rotterdam, "the city of herrings," waxes fat on the Rhine.

From the wonderful development of this same Rhine we Americans, staggering under high freights and congested railways, can learn a great lesson on "How to use rivers."

Navigable for 500 miles, the Rhine boasts more than 20,000 steamers, tugs, and barges—over 5,000,000 tons of shipping all crowded upon one swift, shallow stream. Competing railways cross it and run up and down both its winding, busy banks. Yet these flat-bottom Rhine sidewheelers are busy the year round, towing their long trains of laden barges from Rotterdam to Cologne, to Coblenz, Mainz, Mannheim, and even into Switzerland, as

THE SOURCE OF CAVIAR

The picture shows Russians taking the fish eggs for making this famous delicacy.

DOUGHNUTS, NOT HORSESHOES!

Every article, from toy balloons to kosher doughnuts and "fish-jam" (caviar), is seen in the Moscow bazaar. In every European capital today merchants and diplomats are eagerly bent on working out some plan to start trade with Russia just as soon as political conditions will permit. Germany, especially, confidently hopes to trade overland with Russia and Asia, thus getting food, wool, oil, and cotton and making up for the loss of her merchant marine.

KIRGHIZ NOMAD CHILDREN

Many European economists say that when the world quiets down again a great tide of emigration will probably flow from central and western Europe to the vast pastoral regions of southern Russia and Transcaucasia. Here, in this middle of the world, it is predicted a great cattle and sheep industry will one day develop, and that this region, coupled with Siberia and Mongolia, may become man's chief source of supply of meat-producing animals.

well as feeding the network of canals that ties into this great waterway.

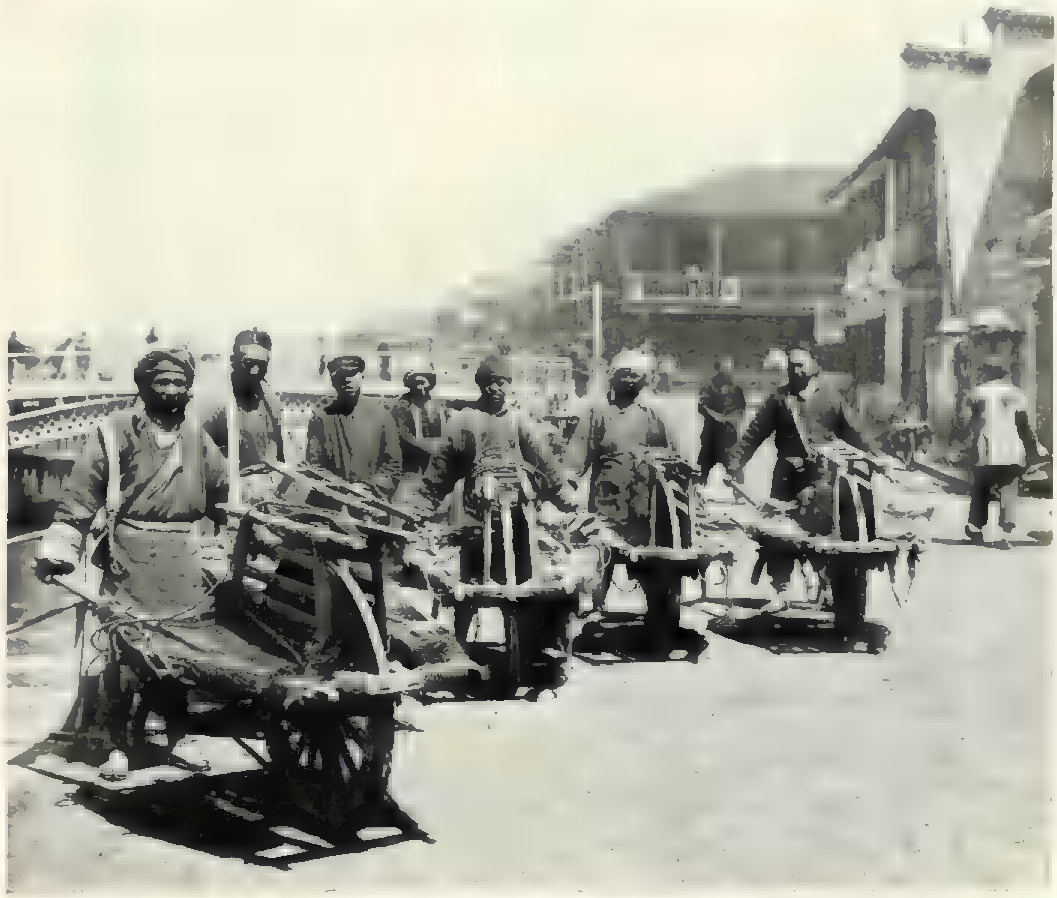
If we could get steamboat trade started again on the Missouri, for example, as in those glad, wild days when troop-carrying, Sioux-fighting stern-wheelers beat up the Big Muddy as far as old Fort Benton, think of the benefit accruing to the Kansas City grain exporter—a cheap, all-water haul, merely one reloading from the river barge at New Orleans to the ocean-going freighter.

Such a combined river-sea freight service, with through rates from Rhine cities to oversea ports, was maintained by the Germans before the war. No wonder the Mannheim manufacturer could sell cheaply in Bombay or Buenos Aires. This same inland waterway transport made it cheaper for Berlin to import hard coal from overseas than to burn native coal *shipped by rail* from southeast Germany, a few hours distant.

No country affords a more striking example of the value of inland waterways in building up foreign trade than does Germany. One of the greatest sources of her economic strength was her incomparable system of navigable rivers and canals, her improved ports and harbors, and her amazingly efficient cranes, derricks, and other mechanical aids for loading and unloading ships.

THE RÔLE PLAYED BY THE BOUNDARY LINE

Man-made laws, as well as winds and tides, have their effect on shipping. Sugar, tobacco, and hemp, pearls, perfumery, and coconuts move freely from Manila to America because we enjoy mutual free trade. Toronto trades easily with Trinidad, but the firm in Providence that makes rifles cannot ship to Mexico when an embargo happens to be on; nor can a dye-maker in Mannheim sell his colors to a Shanghai weaver without a government permit. Today you cannot take a souvenir tea-cup out of Germany without an *erlaubnis* any more than you can ship



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DOCK WORKERS, WITH THEIR PECULIAR WHEELBARROWS, AT SHANGHAI

When the truck follows the wheelbarrow in China (as roads are built) and trade with the hinterland grows, we shall come to depend more and more on China for various raw materials. It is freely predicted that China is now on the verge of what may be the greatest economic growth that any nation has ever known. Even in the past 30 years her foreign trade has increased 500 per cent.

a gill of gin from Jamaica to Baltimore and hold your pew.

And what a rôle the red lines called boundaries play in commercial geography! What a startling cross-section of human life, civilization, manners, morals, and customs these dividing lines between nations often show!

Flora, fauna, and climate of neighboring countries may be identical, but the people, in race, religion and speech, morals and manners, how different! Yet their very needs, arising from their different standards and tastes, their resources and products, lend impulse to barter and sale, lead one tribe to trade with the other, and so add to the complex commercial geography of civilization.

In midwinter our Denver cafés serve ripe tomatoes from the Mexican west coast; and the señoritas of Mazatlan, ordering their trousseaus by mail from California modistes, look on Los Angeles as the center of the world's wealth, culture, and fashion—amusing, perhaps, to New York or Paris, but only an accident of trade geography.

Since the days of wampum, the unit of exchange has been a big factor in the world's trade. Even money has a geography. The answer to the question, How rich are you? depends on where you are when you count your cash. Lately the gymnastics of the mark have turned German trade efforts back to the middle-age habits of barter; the Germans, ask-

ing for raw cotton, offered to pay in socks and underwear made from that cotton.

Geographically, England's position as a distributing center is unique. Goods gathered there from the Seven Seas are easily reshipped to other nations on the Atlantic, the Baltic, or the North Sea. Though she has no rich "back country," few inland waterways, and not factories enough to keep all her ships busy, yet she is great and strong as a trader because she draws on so many oversea colonies.

Norway, on the other hand, being without colonies, but rich in ships and good harbors, charters her boats to others or sends them out as tramps to haul what they can find.

Holland, though producing little and though only a speck on the map, occupies an enviable place in the foreign trade of Europe, lying, as she does, in the heart of the world's commercial center. As traders, the Dutch are without peers. They have actually bought from us, and then undersold us in what we are pleased to call our own markets.

SAWING WOOD IN CHINA

The coolie's pay is so small that he is never more than one day ahead of an empty stomach.

HOW TRADE FOLLOWS THE FLAG

Intense propaganda, not always complimentary to the rival, marks the fight of nations for ocean trade. To see that America is not sinned against is one of our consuls' obligations.

Periodicals, lectures, fairs, motion pictures, and personal visits are all used to make sales, to say nothing of deals and secret compacts among governments.

To push its trade in the South Seas, Japan has set up a commercial museum in Singapore, and is opening a similar exhibit at Harbin for educational work in Manchuria, Mongolia, and Siberia.

From that day in '98 when the influence of the United States was first felt in the Philippines, the brown men there began to flourish. It was the first chance civilization had given them. Today even the most chronic critics of our colonial policy admit that the uplift of Manila, largely due to its close commercial relations with America, is a splendid demonstration of how to carry the white man's burden.

Hawaii has increased its producing

power perhaps fortyfold since "the days of the Empire."

Porto Rico, basking in new-gained opulence, easily imports oversea luxuries and pays with native fruits at fancy prices, because we gave her ships and honest rule.

It is so in Guam; it will be so in the Virgins.

And, since each year we buy more and more from the tropics, it follows that eventually our possessions in the zone of coconuts and crocodiles will, with the aid of Yankee energy, capital, and coöperation, supply us with more and more hemp, jute, sugar, fruits, coffee, and tobacco, and maybe even silk, tea, and rubber, for which we now pay fabulous sums each year to foreigners.

This prestige of the flag, backed by favorable treaties and a vigorous administration, working through trained consuls capable of protecting our interests overseas, imparts courage and enthusiasm to traders and bankers and builds up trade.

Today, for the first time since Yankee whalers split the foam and cobalt from Ensenada to the Aleutians, Pacific paths are once more crowded with American ships, and our own trade with the East increased 300 per cent in the last five years.

To study this culture, the life, language, and habits of oversea races, and to keep America posted on their needs and products is one of the consul's chief functions.

Man's chief needs can be named on the fingers of one hand—food, clothes, heat, light—and of all these we are the world's greatest producer.

It is the very vastness of our own industries and the immensity of our agriculture which cause many Americans to overlook the fact that each year, as we grow, we must import more and more, to balance industry.

Latin America is our greatest storehouse. From her we draw hides, asphalt, tobacco, rubber, sisal, and fruits, as well as oil, silver, copper, zinc, wolfram, vanadium, and iron ore.

Without Cuba we should be quite sugarless and unhappy, and what an epidemic of headaches from Maine to California if Brazil were to refuse that 98 per cent of all our coffee which now comes from her shores.

Perhaps some of the factories in your own home town would have to shut down were we to be suddenly cut off from the stream of raw materials that flows to us from the China Sea.

A mere fragment this, in the great story of trade. But what a vivid, smashing world drama it is, this age-long battle of puny man, this magnificent struggle on land and sea, to live!

The pirates and buccaneers, the China clippers and the bold Bedford whalers are gone forever, but the romance of trade and geography is not dead. Nor does it live only in the fiction of Conrad. It lurks even in restaurant menu cards.

Stop and reflect the next time you order a dinner, from caviar to nuts. Think of the strife, the peril and adventure, of all those who fight in forest and jungle, on pampas and steppes, or go down to the sea in ships in order to feed and clothe the world.

How amazingly complex is foreign trade, and yet how comfortable it makes us. What a debt we owe to that restless, imaginative man who first braved the unknown and brought back the new fruits and the strange slave girls—the pioneer of barter on the sea.

A "COUNTRIES OF THE CARIBBEAN" MAP IN FEBRUARY

CONTINUING its comprehensive map program of 1921, when large scale maps of the New Europe, of Asia, of South America, and of the Islands of the Pacific were issued as supplements to its Magazine, the National Geographic Society has compiled a handsome map in colors of the Countries of the Caribbean which will appear with the February number. This map, size 44 x 25 inches, will show in detail Mexico, the new Republic of Central America (including Guatemala, Honduras, and Salvador), Costa Rica, Panama, and the Islands of the West Indies, together with large scale insert maps of Guantanamo Bay, Porto Rico and the Virgin Islands, and the Panama Canal Zone. Maps of Africa and of the World will be issued as supplements in subsequent issues of the Magazine.

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Pea soup is a favorite round the world. Just dip your spoon tonight into a savory, creamy plateful of Campbell's. You'll say you never tasted such a pea soup—so mellow, so delicious, so rich in quality and satisfaction.

Campbell's Pea Soup is made from dainty tender peas blended, according to Campbell's own recipe, with pure country milk and fresh creamery butter, delicately spiced. How you will like it!

How to prepare Cream of Pea

Simply by adding an equal quantity of milk or cream to Campbell's Pea Soup just before serving you have a velvety, smooth, heavy Cream of Pea which will be one of your prize dishes. Even more attractive served in bouillon cups topped with whipped cream.

21 kinds **12 cents a can**

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Forty years ago the management of the Bell Telephone System organized for a supply of the apparatus which it foresaw would be required in the development of its new industry—telephone service.

The telephone in some countries is the luxury of the rich, but in America it is used by practically all the people. This universal service is due in large measure to foresight in engineering and manufacture.

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It is only when careful readjustment on the polishing machine has successfully corrected this error and the form of the light rings proves this fact, that the lens is good enough to become a Kodak Anastigmat.

Do you know how a lens forms an image or why cameras have different kinds of lenses? Both of these questions, and others, you will find answered in a complete and interesting fashion in the little free booklet "About Lenses". We should like to send you a copy.

The KODAK ANASTIGMATS *f*.7.7 *f*.6.3 and *f*.4.5

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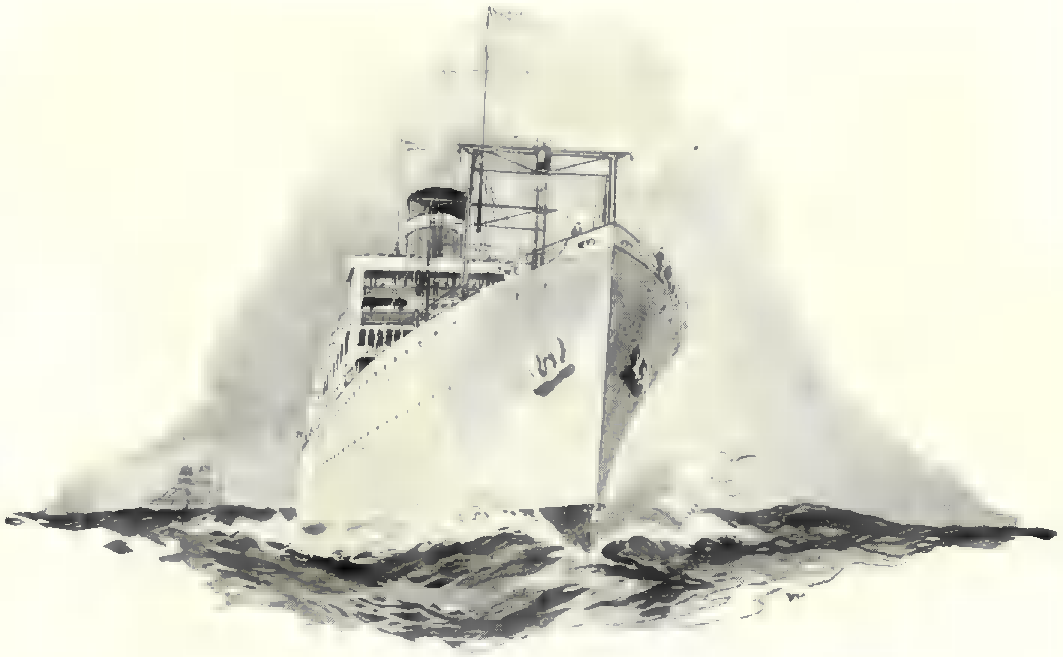

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THE romance of the old Mississippi River steamboat days hangs over New Orleans. Quaint, tall-funnelled side wheelers, recalling the heyday of nine-boiler floating palaces and thrilling river races, still nose their way up to the levees.

As a Mississippi pilot, Samuel Clemens, famous humorist, often visited the Crescent City. He speaks interestingly of Creole restaurants and the beauty and gaiety of French New Orleans. Its famous cafes and shops, its Mardi Gras and its picturesque river trips continue to enchant the visitor. By all means, stop over there on your trip via the Sunset Route.

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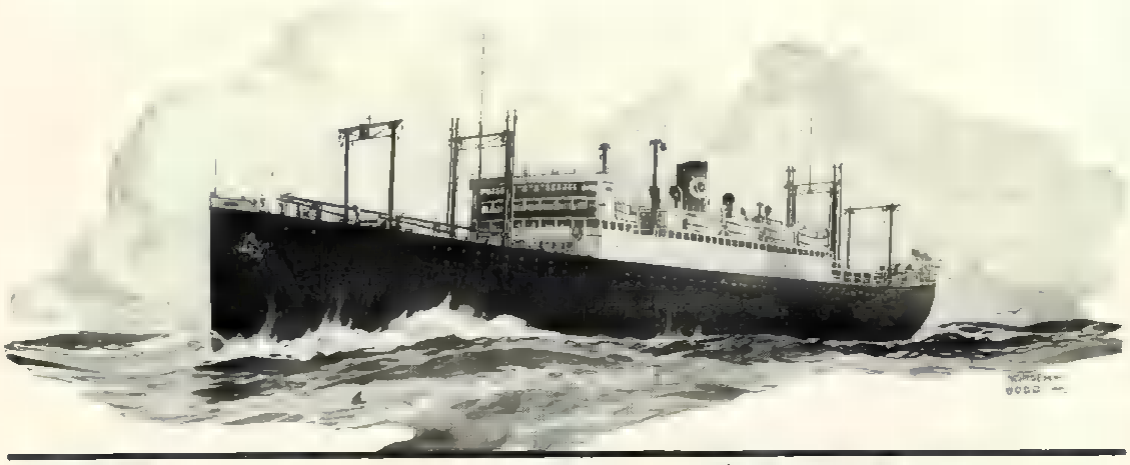

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On American Ships

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Film is that viscous coat you feel. It clings to teeth, enters crevices and stays. That is what discolors — not the teeth.

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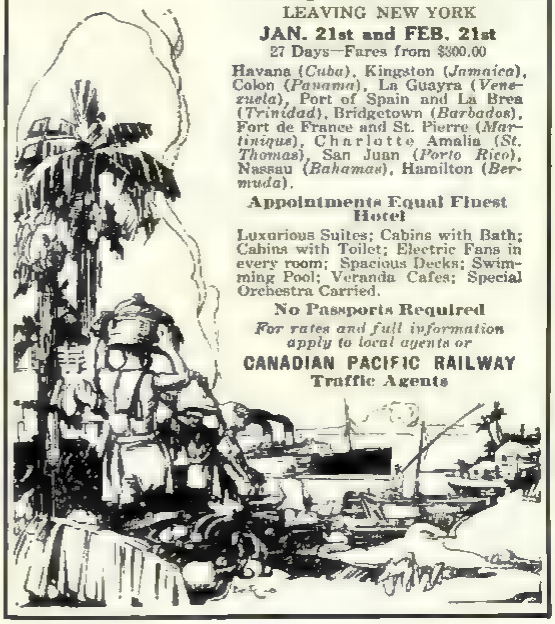

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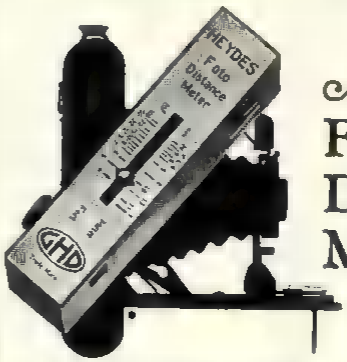

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NOTE:—This announcement answers two questions that big employers repeatedly ask, viz: (1) What makes LaSalle men so practical? (2) Why don't more men train with LaSalle for the high pay positions in business?

The LaSalle Problem Method

—and how it successfully condenses a lifetime of experience into a few months of study

A question has blocked action on the part of many thoughtful men who were and are sincere in their desire to qualify in high salary fields. They have asked themselves whether training gained at home by correspondence might not prove to be mere "book-learning"—impractical—unmarketable.

We have no fault to find with this question—it is a natural one. The burden of our criticism rests on the man who permits the question to be its own answer, and to block and stop him in his upward climb without seeking further enlightenment.

For when more than three hundred thousand men have trained with LaSalle and found bigger, better things thru this training there must be sound reasons for their success.

There *are* reasons. They lie in the LaSalle Problem Method of imparting —not "book-learning"—but real, practical, usable business experience.

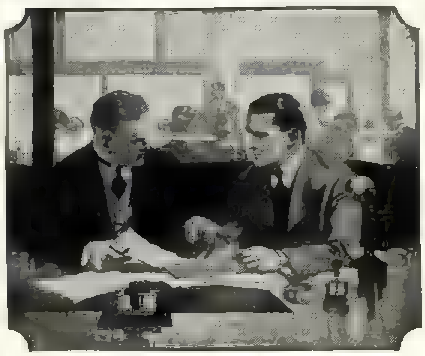
A knowledge of principles is one thing. The ability to apply and use principles—actually do the work at hand, is another—and the gap between the two is bridged by one factor and one only—*Experience.*

That's why business men place such a premium on experience—it safeguards them against costly experiments.

Suppose you decided to take up as your life work—accountancy, say.

Now stretch your imagination a trifle.

Suppose that thru the offices of an influential friend, arrangements were made for you to step in and immediately occupy the position you intended training to fill—right in the organization of a big corporation—with a complete department under your orders.



The LaSalle Problem Method gives you self-confidence—practical, usable knowledge—because it makes you an experienced man.

Say that by your side were placed, as your instructors and guides, several high grade accountants—men of national reputation—their sole duty being to train and equip you.

With these men instructing you in proper principles—then, you yourself exercising your own judgment in handling transactions and solving problems as they arose in your daily work—do you get the idea? You would be acquiring *experience* right along with the bed-rock fundamentals of the profession.

Sitting in the chair of authority—dealing with actual business—learning by applying what you learned—with experts correcting your errors, commending good work, guiding you aright through the ramifications, routine and emergency situations of the entire accounting field and making you make good every step of the way—mind—not in a class-room, but right in a business office where you would be actually doing the work you were training for—

—wouldn't you, at the end of a year or so in *this* situation be much farther ahead than men who had spent years seeking the same knowledge in the old, hard, "find-out-for-yourself" way?

You can answer these questions—your good sense tells you that the situation described would make you a practical man—sure, certain and confident—able and capable of holding down any situation the accounting field offered.

And that is why the LaSalle Problem Method makes practical men. Simply because the procedure outlined above is followed—exactly.

True, you do your work at home. True, the experts who help you are located here in Chicago.

Nevertheless, under the LaSalle Problem Method you are actually occupying the position you are training to fill, whether it be in the accountancy field, or traffic or business management, or law, or correspondence—irrespective of what you are studying you are acquiring principles and applying them in actual business under the watchful eyes and helpful guidance of men big in your chosen field.

And when you have completed your LaSalle work, you can truthfully say that you are not only a thoroly trained man, but an *experienced* man—you know the bed-rock principles and you have *used* them all—they are familiar tools in your hands.

A LaSalle man can walk in anywhere with confidence. He does not feel the uncertainty and fear that arise when one faces the new and unknown. Under the Problem Method he has explored his chosen field on his own feet—the questions, the problems, the difficulties—he has met, faced and conquered them all.

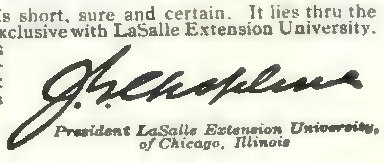
His experience makes him know that altho he may be assuming a new position at higher pay, the duties of that position are an old, familiar story.

Experience is cash capital in business.

There are only two ways to get it.

One is the old, slow, uncertain way. The man who chooses to learn a branch of business by picking it up bit by bit as he goes along, finds the years slip by faster than he thought and sometimes his progress not as sure as he had anticipated. For all the "bits of knowledge" he sought may not have come his way.

The other road is short, sure and certain. It lies thru the Problem Method, exclusive with LaSalle Extension University. This way condenses into months experience which it takes most men a lifetime to gain.



President LaSalle Extension University, of Chicago, Illinois

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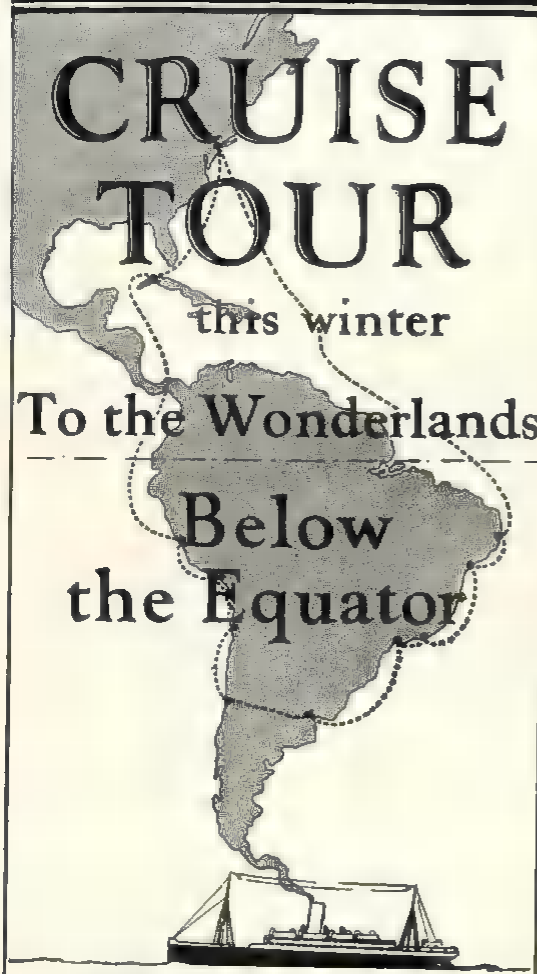

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MEDICAL science proves that unhealthy gums cause serious ailments. People suffering from Pyorrhea (a disease of the gums) often suffer from other ills, such as rheumatism, anaemia, nervous disorders or weakened vital organs. These ills have been traced in many cases to the Pyorrhea germs which breed in pockets about the teeth.

Four out of five people over forty have Pyorrhea. It begins with tender and bleeding gums. Then the gums recede, the teeth decay, loosen and fall out, or must be extracted to rid the system of the infecting Pyorrhea germs.

Guard your health and your teeth. Keep Pyorrhea away. Visit your dentist often for teeth and gum inspection, and make daily use of Forhan's For the Gums.

Forhan's For the Gums will prevent Pyorrhea—or check its progress—if used consistently. Ordinary dentifrices cannot do this. Forhan's will keep the gums firm and healthy, the teeth white and clean.

35c and 60c tubes in U. S. and Canada.

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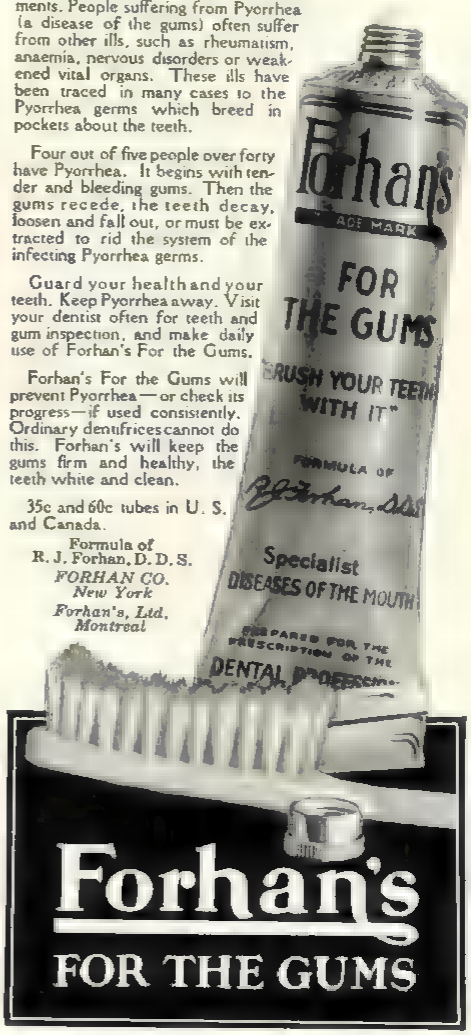

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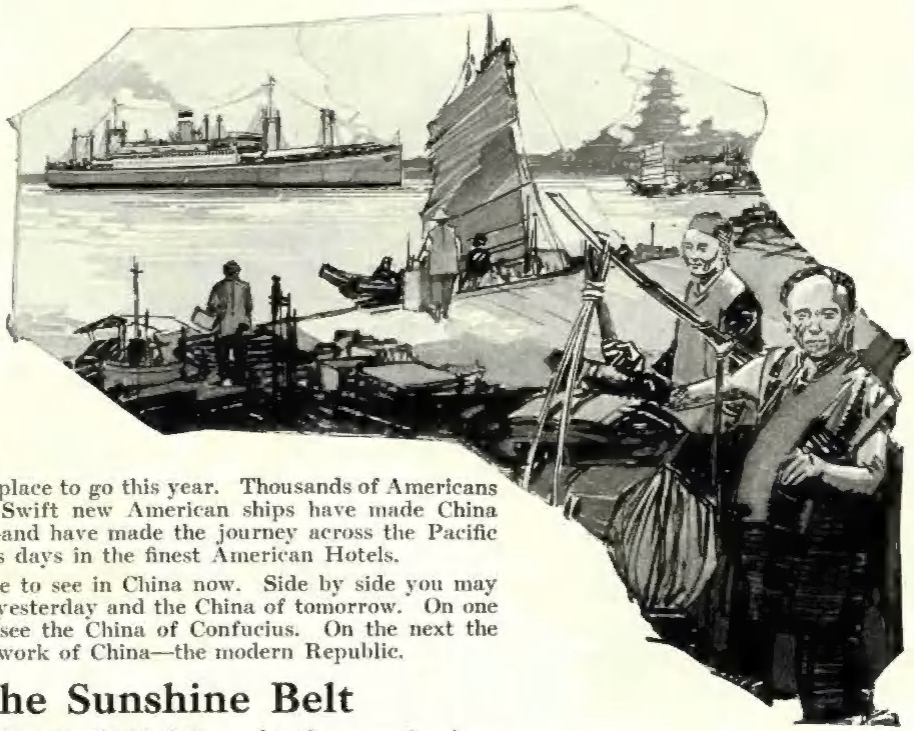

CHINA is the place to go this year. Thousands of Americans are going. Swift new American ships have made China more accessible—and have made the journey across the Pacific as comfortable as days in the finest American Hotels.

There is more to see in China now. Side by side you may see the China of yesterday and the China of tomorrow. On one corner you may see the China of Confucius. On the next the undeniable handiwork of China—the modern Republic.

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For 73 years The Pacific Mail Steamship Company has been known in every port on the Pacific. Their service is unexcelled.

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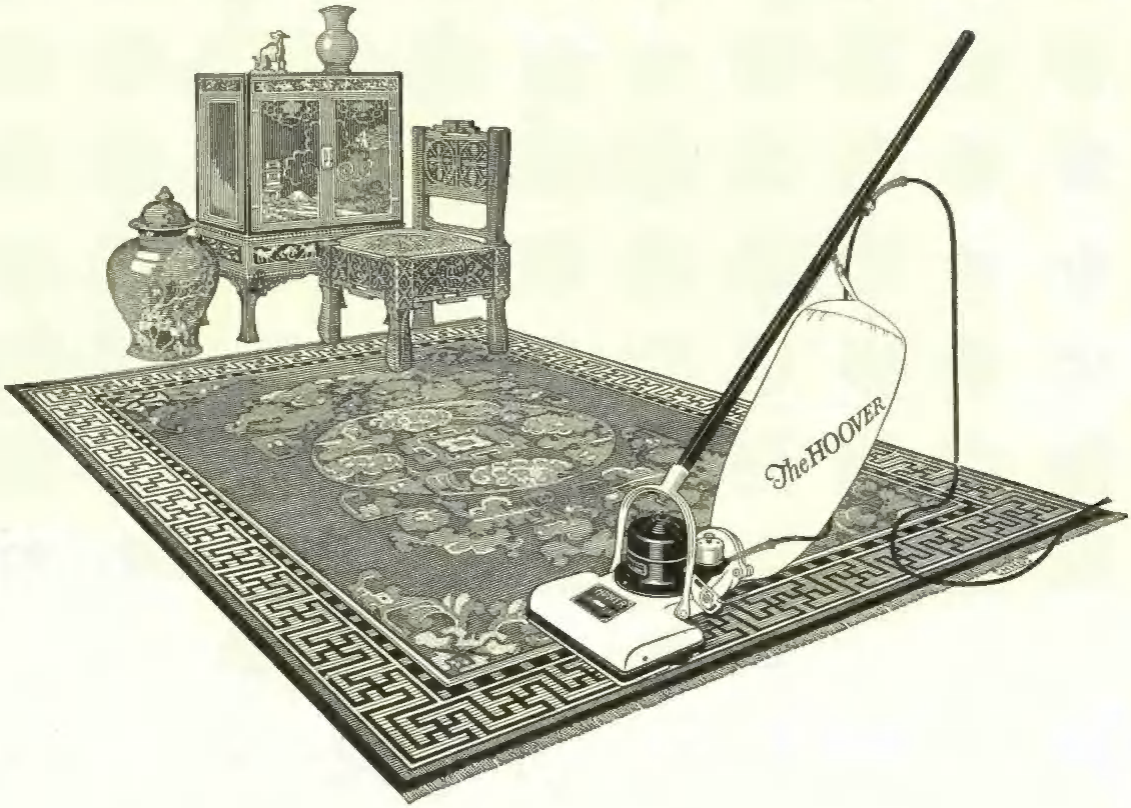

PRESS OF JUDD & DETWEILER, INC.
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How much would *you* guess these 30 great books are worth?

884 booklovers were asked to estimate the value of this de luxe edition of the Little Leather Library. The guesses ranged from $5 to $100; the average was $18. Not a single person estimated correctly. What would be *your* guess?

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A sample of these books was sent to 884 booklovers, people who owned libraries. We asked them to guess what this set of 30 books was worth. Here are their estimates (shown in the panel), AFTER EXAMINING A SAMPLE. The signed estimates are on file in our office for inspection.

What 884 Book-lovers Guessed

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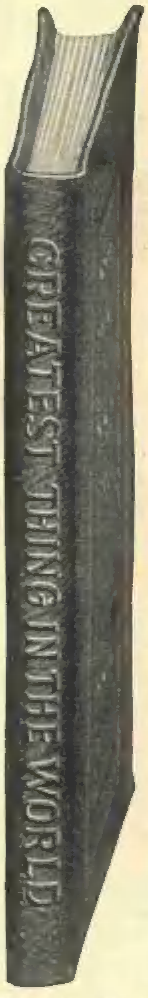

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